CVX-V3/V3P

SERVICE MANUAL

US Model
Canadian Model
CVX-V3

AEP Model
UK Model
CVX-V3P

Photo: CVX-V3

NTSC model: CVX-V3
PAL model : CVX-V3P

SPECIFICATIONS

System

Video signal	CVX-V3: NTSC color CVX-V3P: PAL color
Image device	1/4 inch color CCD, CVX-V3: 410000 pixels (total) CVX-V3P: 470000 pixels (total)
Lens	3x manual zoom lens, f=3.4-10.2 mm, F2.8-4.0
Minimum illumination	6 lux
Illumination range	6 to 100,000 lux
Recommended illumination	more than 100 lux
Exposure control	AUTO exposure
Power requirement	7.2 V
Power consumption	approx. 1.8 W
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Dimensions (w x h x d)	Camera: approx. 36 x 40 x 70 mm (1.4 x 1.6 x 2.8 in.) Main unit: approx. 60 x 37 x 110 mm (2.4 x 1.5 x 4.3 in.)
Cord length	approx. 2 m
Mass	Camera: approx. 75 g (2.7 oz) Main unit: approx. 135 g (4.8 oz)
Built-in microphone	Electrostatic condenser microphone
MIC input jack	Stereo minijack 0.388 mV Low impedance with DC 2.5 to 3.5 V, output impedance 6.8 kilohms

Output jacks

Video output	Phono jack (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced
Audio output	Phono jacks (2: stereo L and R) 327 mV (at output impedance 47 kilohms), impedance less than 2.2 kilohms)
S video output	4-pin mini DIN (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced Chrominance signal: CVX-V3: 0.286 Vp-p, 75 ohms, unbalanced CVX-V3P: 0.3 Vp-p, 75 ohms, unbalanced

Supplied accessories

Adaptor (1)
Connector cover (1)
Operating instructions (1)

Design and specifications are subject to change without notice.

COLOR VIDEO CAMERA

MICROFILM

SONY®

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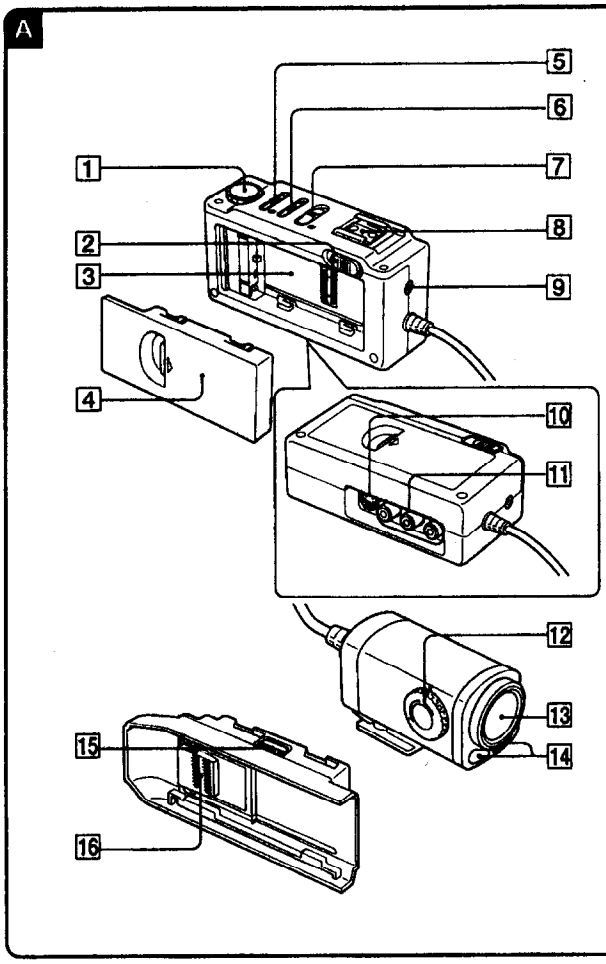
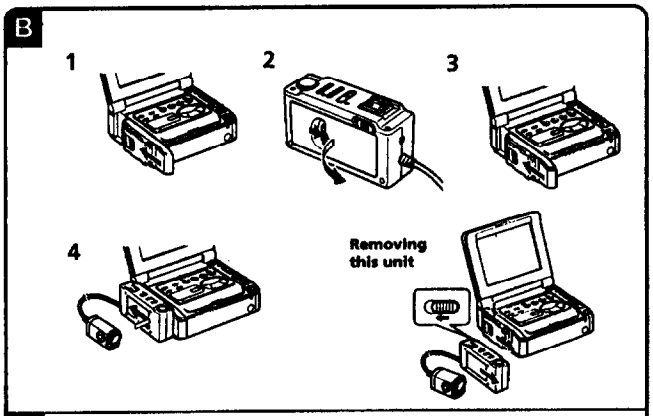
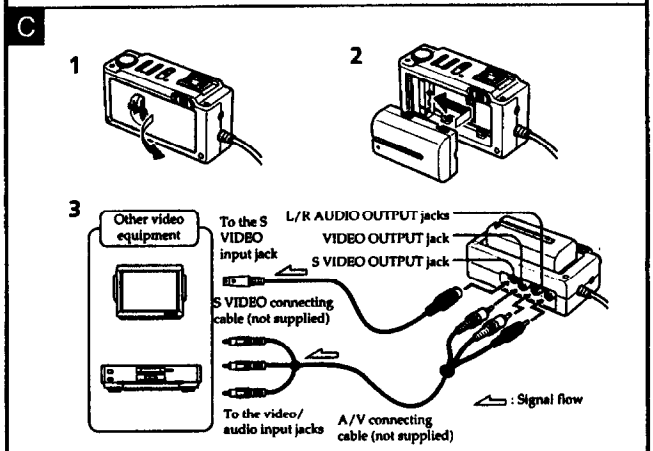
* The color reproduction frame is shown after the page of ELECTRICAL PARTS LIST.

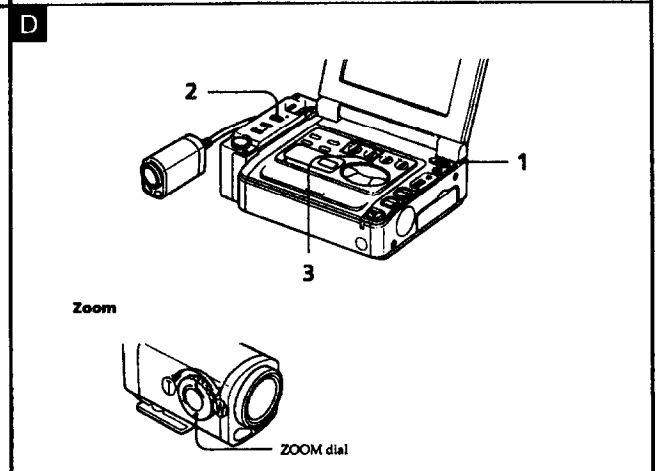
SECTION 1
GENERAL

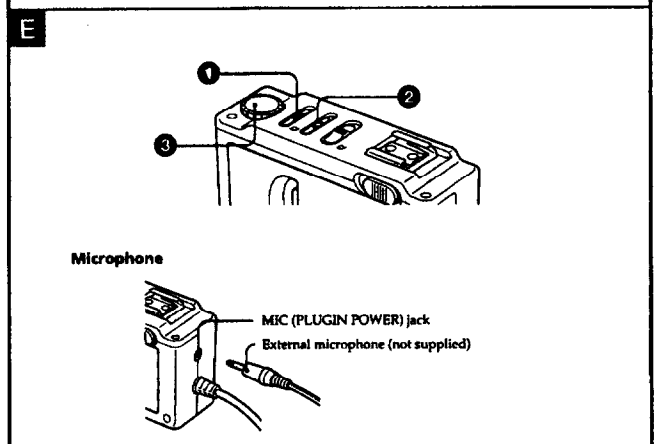
This section is extracted from instruction manual.











Before operating the unit, please read this instruction thoroughly and retain it for future reference.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the United States and Canada

DISPOSAL OF LITHIUM ION BATTERY.
LITHIUM ION BATTERY.
DISPOSE OF PROPERLY.
You can return your unwanted lithium ion batteries to your nearest Sony Service Center or Factory Service Center.

Note: In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only)
For the Sony Factory Service Center nearest you call 416-499-SONY (Canada only)

Caution: Do not handle damaged or leaking lithium ion battery.

For the customers in the United States

CAUTION
You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

Features

- Precision CCD with 410,000 pixels for CVX-V3 and 470,000 pixels for CVX-V3P.
- Compact design, and splash-proof camera
- 3x zoom function.
- Macro function 10 cm close-up shooting ability
- Built-in stereo microphone.
- The supplied adaptor allows connection of the DSR-V10/V10P VCR.
- Video/audio and S-Video outputs allow connections of other video equipment.

Although the camera is splash-proof, the main unit cannot be used under or in water.

A Identifying the parts

Main unit

1 PROGRAM AE dial
2 RELEASE button
3 Battery pack/adaptor mounting surface
4 Connector cover
5 BACK LIGHT switch and lamp
6 MIC MODE switch (for the built-in microphone)
7 POWER switch and lamp
8 Camera mounting surface
9 PLUGIN POWER jack (for an external microphone with stereo miniplug)
10 S-VIDEO OUTPUT jack
11 VIDEO/AUDIO OUTPUT jacks

Camera

12 Zoom dial
13 Lens
14 Built-in stereo microphone

Adaptor

15 RELEASE button
16 Connector

Connections

The DSR-V10/V10P VCR can be connected to this unit. The VCR supplies power to this unit.
When using this unit as a single video camera, connect this unit to a TV or VCR using the A/V connecting cable (not supplied). Refer to the operating instructions supplied with the equipment to be connected.

B When connecting this unit to the VCR

1 **Open the LCD screen on the VCR and remove the connector cover.**
2 **Remove the connector cover on this unit.**
3 **Attach the supplied adaptor to the VCR.**
4 **Attach this unit to the supplied adaptor.**

When removing this unit from the adaptor

Slide the RELEASE button on this unit in the direction of the arrow.

When removing the adaptor from the VCR

Slide the RELEASE button on the adaptor in the direction of the arrow.

Notes
- When this unit is not connected to the VCR, be sure to attach the jack cover on the VCR for jack protection. The procedure for attaching the jack cover is same as the procedure for attaching the adaptor.
- When not using this unit, be sure to attach the connector cover to protect the connector.

C When using this unit as a single video camera

1 **Remove the connector cover on this unit.**
2 **Attach a charged battery pack (not supplied) to this unit.**
The AC-V700 power adaptor can be used to supply power from an AC power source.
3 **Connect other video equipment using the A/V connecting cable (not supplied).**
Use an appropriate audio/video connecting cable to connect this unit to other video equipment. If the other video equipment has an S VIDEO jack, connect the S VIDEO jack instead of the yellow (video) jack. A clearer picture can then be obtained.

Notes
- When not using this unit, be sure to attach the cover to protect the connector.
- When the volume level of the connected equipment is too high, howling may be heard from the speakers. In this case, lower the volume level or place this unit away from the speakers.
- Refer to the operating instructions supplied with the video equipment to be connected.

D Recording

Pictures shot with this unit can be recorded onto a VCR, etc. Refer to the operating instructions supplied with the video equipment to be connected.

When recording on a VCR

1 **Turn on the power of the VCR.**
The POWER lamp on the VCR lights up.
2 **Turn on the power of this unit.**
The POWER lamp on this unit lights up.
3 **Insert a cassette into the VCR and start recording.**

Note on recording
Contents of the recording cannot be compensated if recording is not made due to a malfunction of this unit, video tape, etc.

When using this unit connected to the DSR-V10/V10P
When playback, fastforward, rewind or picture search is performed on the VCR, we recommend turning off the power of this unit.

Recording time with the battery pack
When using with the DSR-V10/V10P

Battery pack	Possible usage time (min.)
NP-F750	85 (75)
NP-F950	135 (120)

When using a fully charged battery pack (Full charge), the numbers indicate the remaining recording time . When using a normally charged battery pack (Normal charge), the numbers in parentheses indicate the remaining recording time.

Notes on the battery pack
- When the power of the battery pack attached to this unit runs low while using this unit connected to other video equipment, the POWER lamp on this unit flashes. When the battery is nearly empty, the POWER lamp flashes rapidly. The POWER lamp then goes off and the power is turned off after a few seconds.
- When the power of the battery pack attached to the video equipment which is connected to this unit runs low, the POWER lamp on this unit goes off and then the power turns off automatically.
- When the NP-F330, NP-F530 or NP-F550 is used, the recording time may be shorter, or recording may not be performed. We recommend using a battery pack with a longer battery life.

Using the zoom feature

Turn the ZOOM dial towards "T" or "W".
Towards "T": for telephoto (subject appears closer)
Towards "W": for wide-angle (subject appears farther away)

Close-up shooting

Turn the ZOOM dial towards "MACRO" and focus the subject within the MACRO range by turning the ZOOM dial.
You can shoot a subject that is at least about 10 cm away from the lens surface.

E Using various features

❶ **Shooting with a backlight**
When shooting a subject with the light source behind the subject, use the BACK LIGHT function to compensate for the additional brightness.

Set the switch to ON
The BACK LIGHT lamp lights up and the brightness of the subject is compensated.
Set the switch to OFF.
The BACK LIGHT function is canceled.

❷ **Shooting in strong wind**
When shooting in strong wind, use the MIC MODE function to reduce any wind noise.

Set this switch to WIND
This function reduces any wind noise picked up with the built-in microphone. With this setting, the sound changes slightly. When shooing in a normal environment, set this switch to NORMAL.

❸ **Adapting to your shooting situation – PROGRAM AE**
The PROGRAM AE function properly adjusts the settings according to the subject and shooting environment.

Turn the PROGRAM AE dial to select the desired PROGRAM AE mode
The PROGRAM AE function works in the selected mode.

Turn the PROGRAM AE dial to the ● position
The PROGRAM AE function is canceled.

Spotlight mode
For shooting subjects in a spotlight, such as at the theater or other formal event. This function prevents the subjects from appearing white under a strong light.

Soft Portrait mode
Creates a soft background for subjects such as people or flowers, and faithfully reproduces skin color.

Sorts Lesson mode
For shooting fast-moving subjects such as in tennis or golf games.

Beach & Ski mode
For shooting people or faces in strong light or reflected light, such as at a beach in midsummer or on a ski slope. This function prevents the subjects from appearing dark.

Sunset & Moon mode
For shooting subjects in dark environments such as sunsets, fireworks, neon signs, or general night views.

Landscape mode
For shooting distant subjects such as mountains.

Note
Flickering or changes in color may occur in the following modes if shooting is carried out under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp. If this happens, turn off PROGRAM AE.
– Soft Portrait mode
– Sports Lesson mode

Using an external microphone

Connect an external microphone to the MIC (PLUGIN POWER) jack.
The MIC (PLUGIN POWER) jack can also be connected to the plug-in-power microphone.
When an external microphone is connected, the built-in microphone of this unit does not function.

Precautions

On the jacks and cords
- Be sure that nothing metallic comes into contact with the metal part of the jacks. If this happens, a short may occur and the unit may be damaged.
- Always clean the jacks.
- Do not forcibly pull or tug on the cord.

On usage and storage
- Never leave the unit exposed to high temperatures, such as near a heater, in a car parked in the sun or under direct sunlight. This may cause the casing to deform, and the unit to malfunction.
- Do not get sand or dust into the unit. When you use the unit on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction, and sometimes this malfunction cannot be repaired.
- Keep the unit away from strong magnetic fields. Recording may not perform normally.
- Do not operate the unit for long periods of time tightly confined, such as wrapped in a bag. Doing so may cause heat to build up and result in malfunction of the unit.

On shooting
If you aim the lens towards a strong light source, such as the sun, a shadow or "ghost" may appear in the picture.

Usage life of the rubber casings
Rubber casings are used on 11 parts inside of the camera for splash-proof protection. The usage life of these rubber casings vary depending on usage. We recommend replacing these rubber casings once a year to maintain the splash-proof protection.
You are liable for the cost of the rubber casings replacement.

On the splash-proof system
This unit is rated a splash-proof II type structure* by JIS standards. When using this unit, be sure to observe the following.
- Although the camera is splash-proof, the entire unit is not an underwater video camera. Never use this unit under water. It may cause the unit to malfunction.
- The main unit is not splash-proof. Do not let the main unit get wet.
- Drops of water or debris on the lens cover effects the recording picture. Before using this unit, be sure to wipe the lens clean.

* Splash-proof II type structure:
No damaging effects will occur from a splash with a 15° range of a vertical angle.

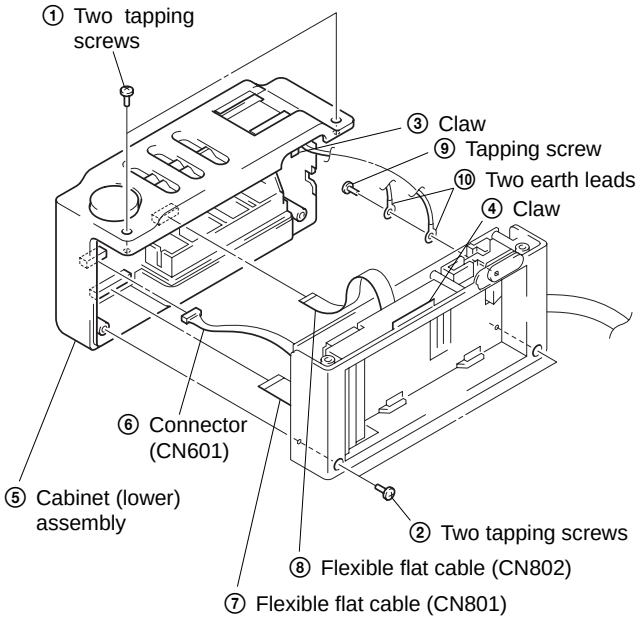
Care of this unit when splashed
If this unit is splashed by water or other liquid, wipe it completely with a dry soft cloth. Although the camera is splash-proof, leaving the unit wet may cause it to malfunction.
If the unit is brought directly from a cold place to a warm place, moisture may condense on the lens cover or camera (moisture condensation). In this case also, wipe it completely dry.

Care of this unit
Clean the unit body with a cloth lightly moistened with water, and then wipe the moisture with a dry soft cloth. Do not wash the unit in running water. Water may seep inside of the unit due to the water pressure, and it may damage the unit.

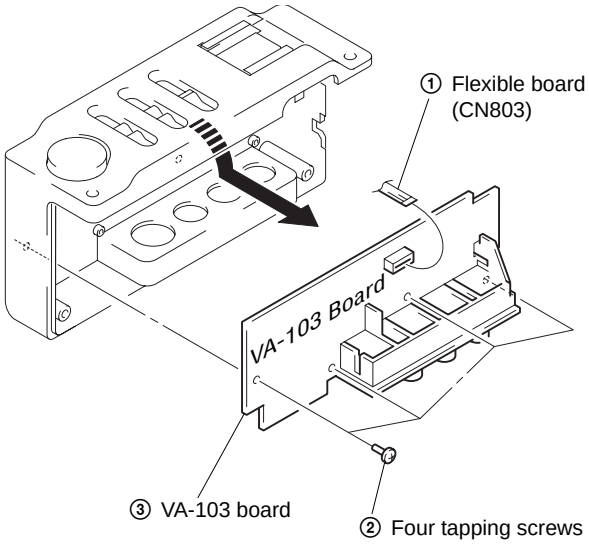
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

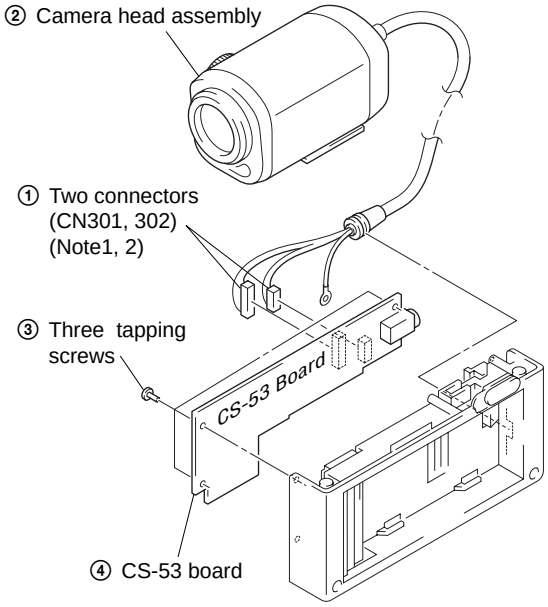
2-1. REMOVAL OF CABINET (LOWER) ASSEMBLY



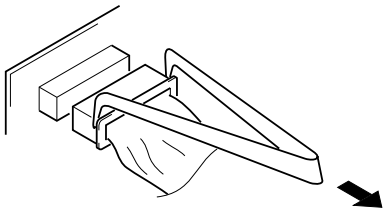
2-2. REMOVAL OF VA-103 BOARD



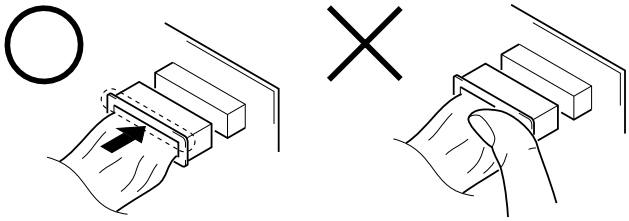
2-3. REMOVAL OF CAMERA HEAD ASSEMBLY, CS-53 BOARD



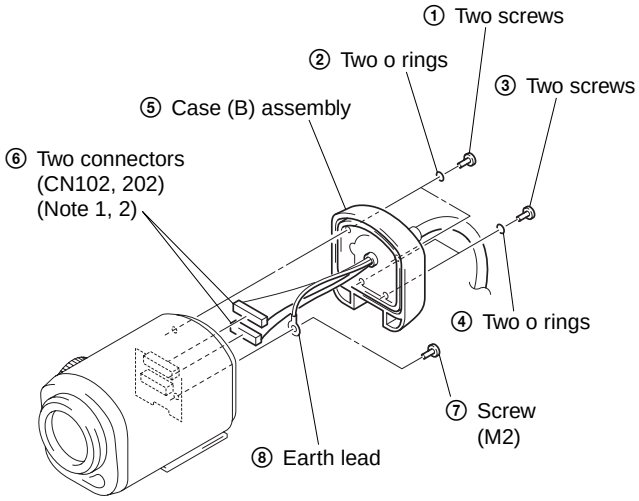
Note 1: When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.



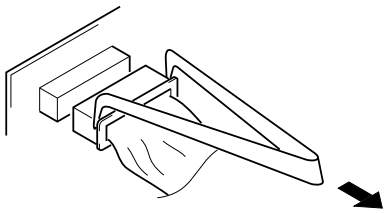
Note 2: When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.



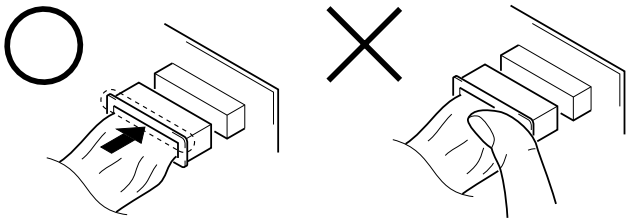
2-4. REMOVAL OF CASE (B) ASSEMBLY



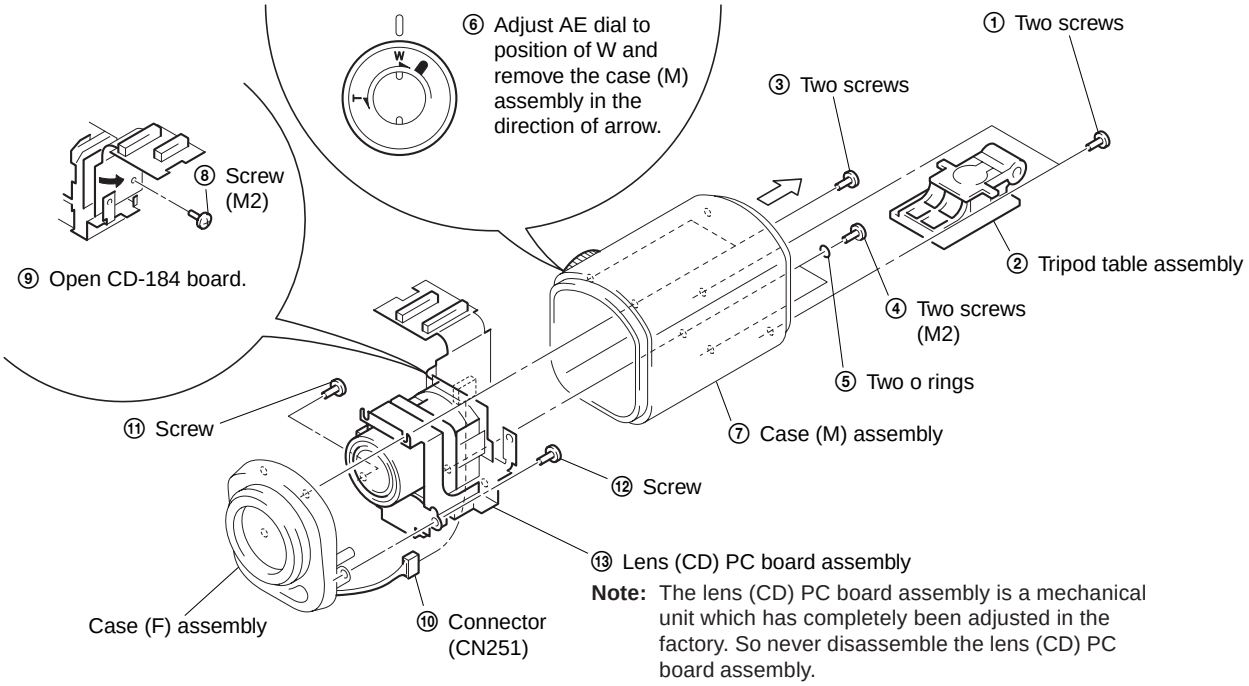
Note 1: When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.



Note 2: When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.

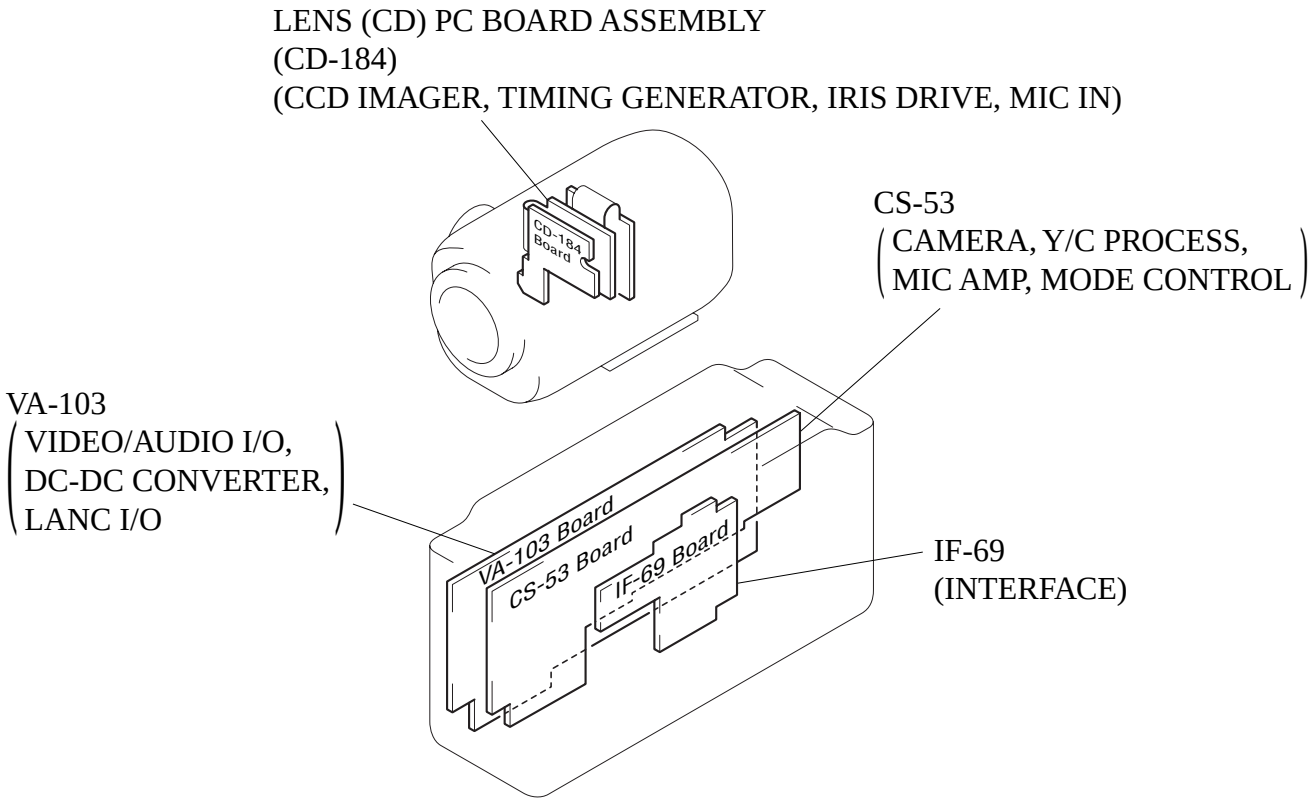


2-5. REMOVAL OF LENS (CD) PC BOARD ASSEMBLY



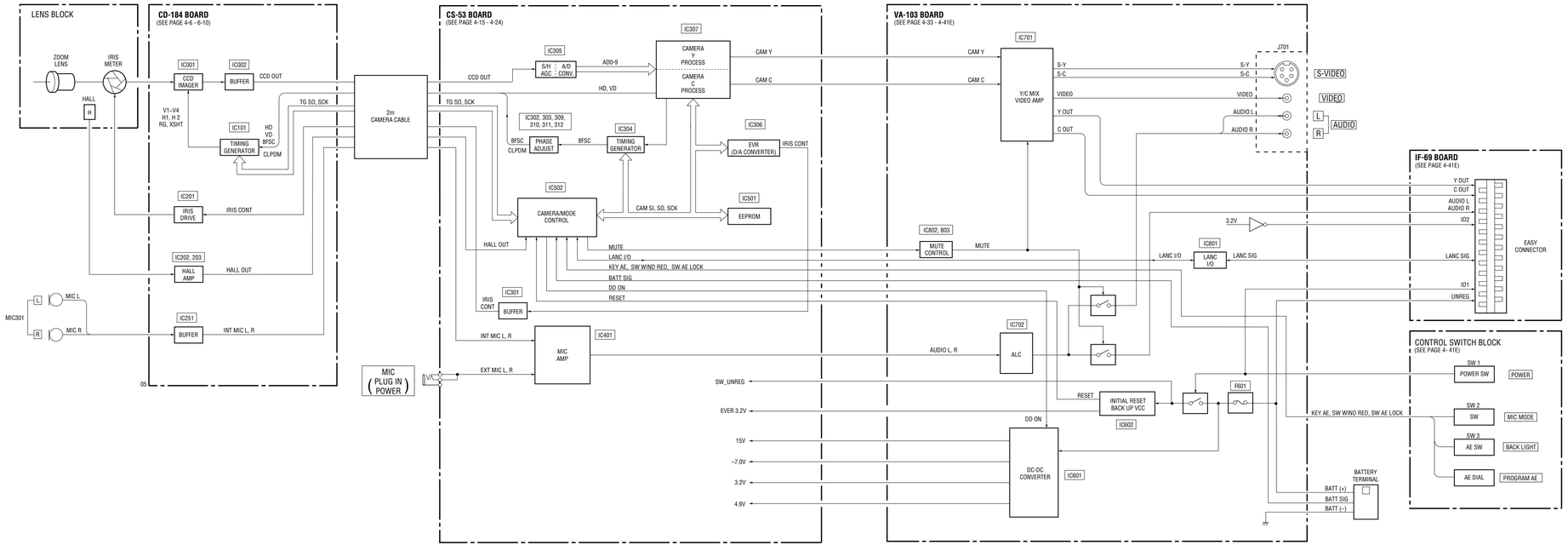
Note: The lens (CD) PC board assembly is a mechanical unit which has completely been adjusted in the factory. So never disassemble the lens (CD) PC board assembly.

2-6. CIRCUIT BOARDS LOCATION

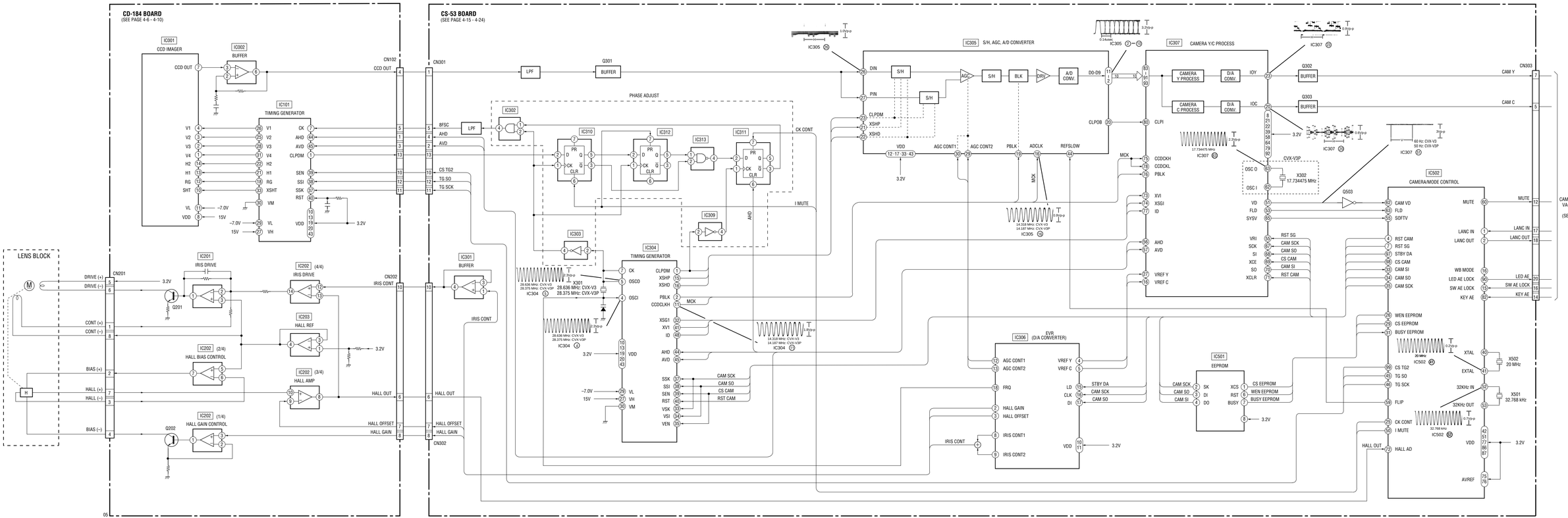


SECTION 3
BLOCK DIAGRAMS

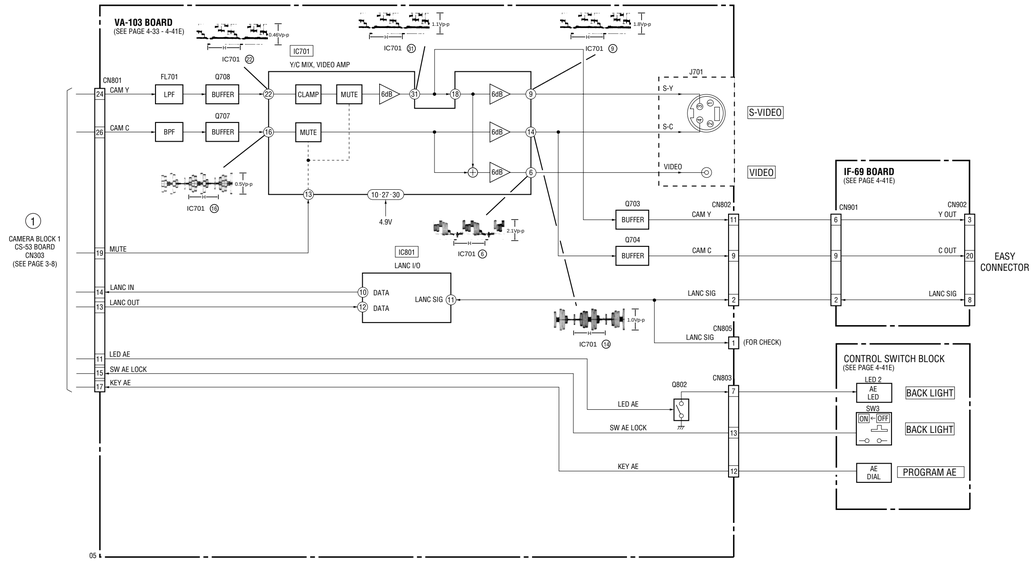
3-1. OVERALL BLOCK DIAGRAM



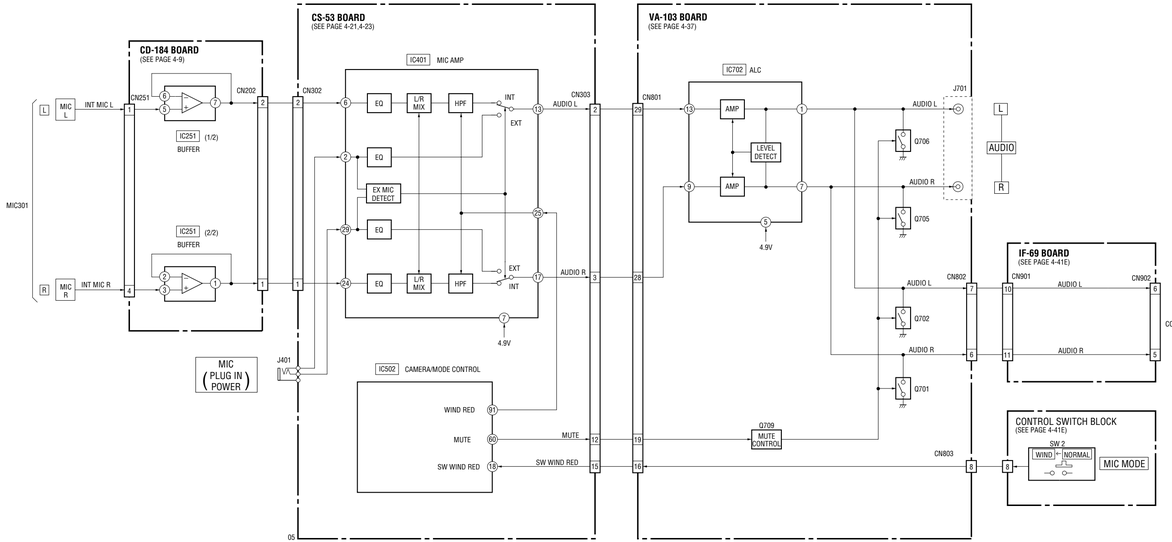
3-2. CAMERA (1) BLOCK DIAGRAM



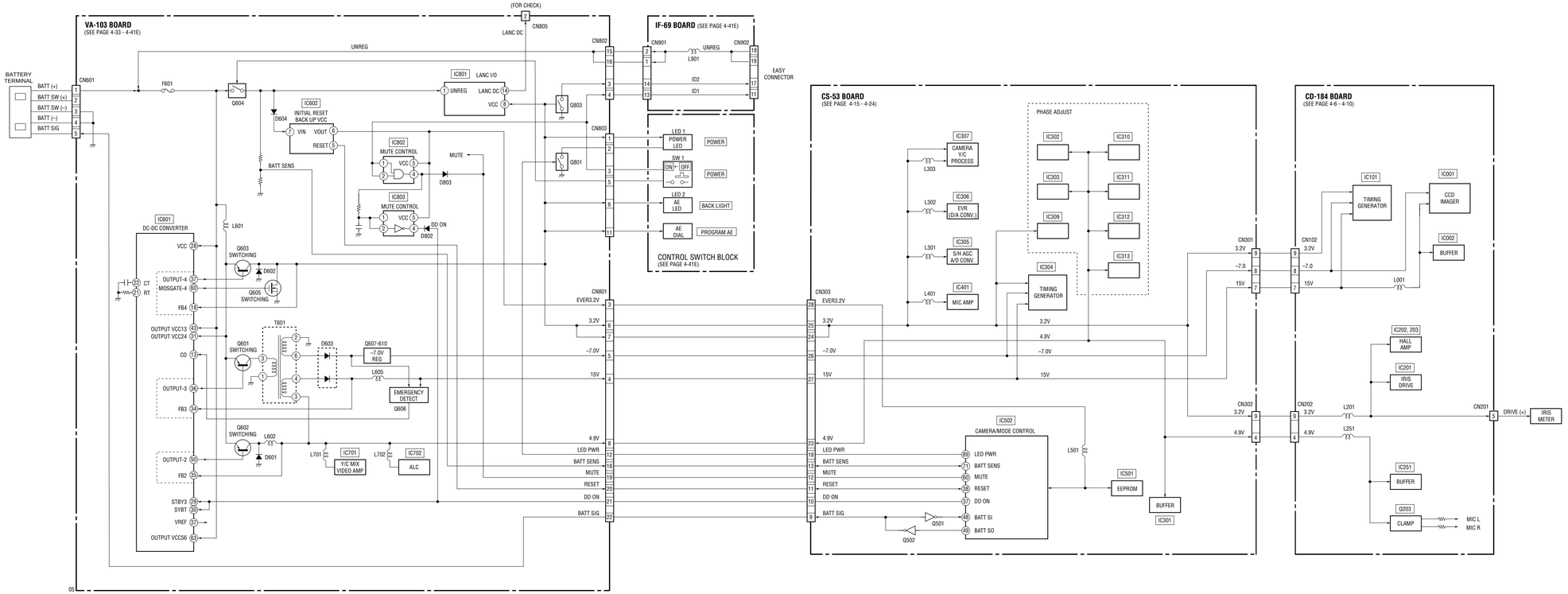
3-3. CAMERA (2) BLOCK DIAGRAM



3-4. AUDIO BLOCK DIAGRAM

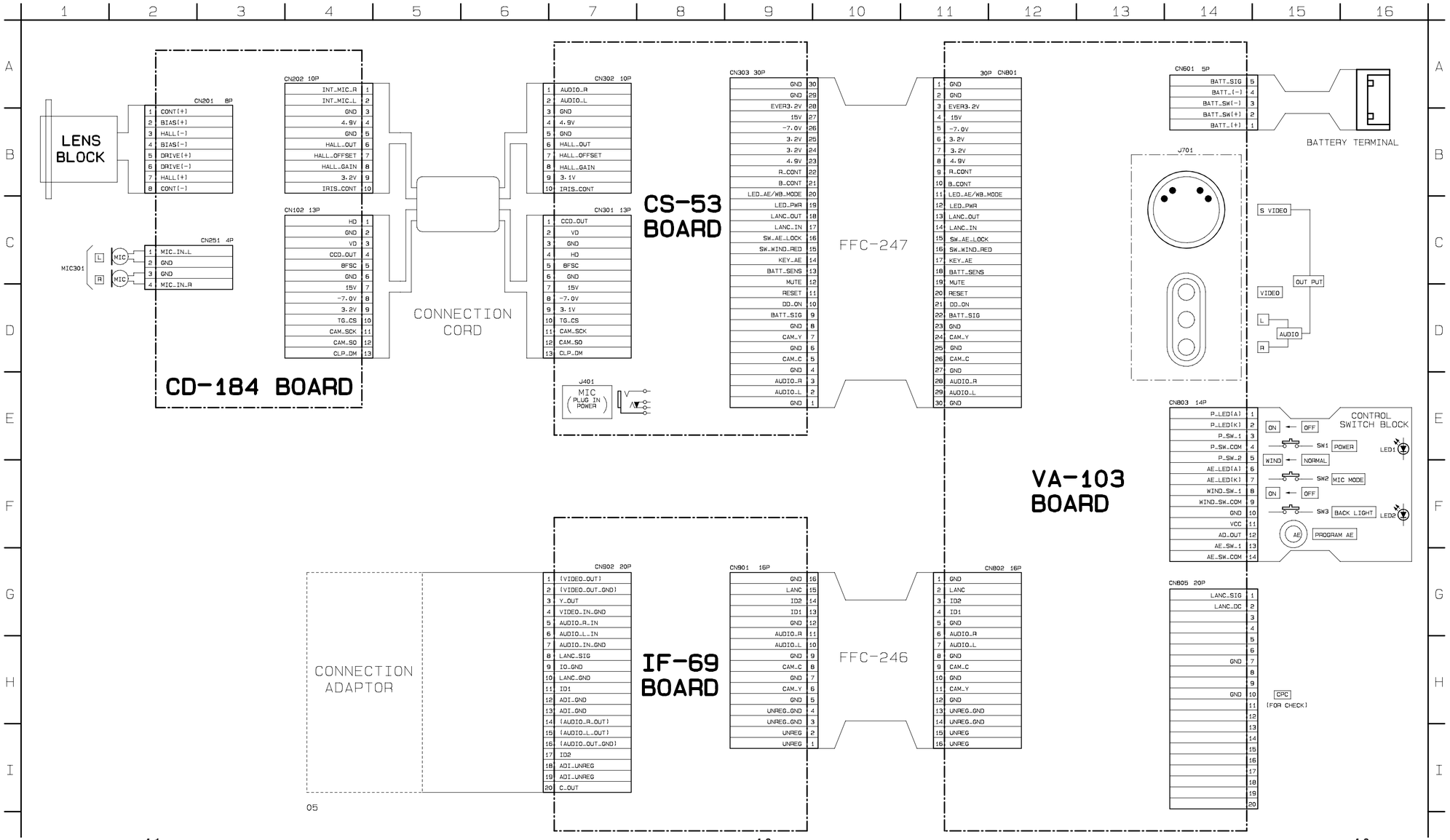


3-5. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM

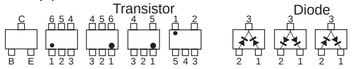


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ▒▒▒: Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.



(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line *
- : B– Line *
- : IN/OUT direction of (+,–) B LINE. *
- : adjustment for repair. *
- Circled numbers refer to waveforms. *

* Indicated by the color red.

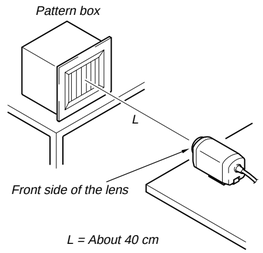
Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



L = About 40 cm

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

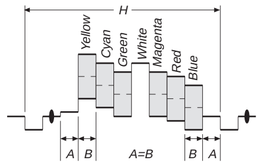


Fig. a (Video output terminal output waveform)

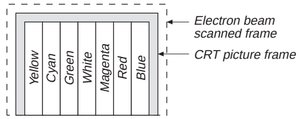
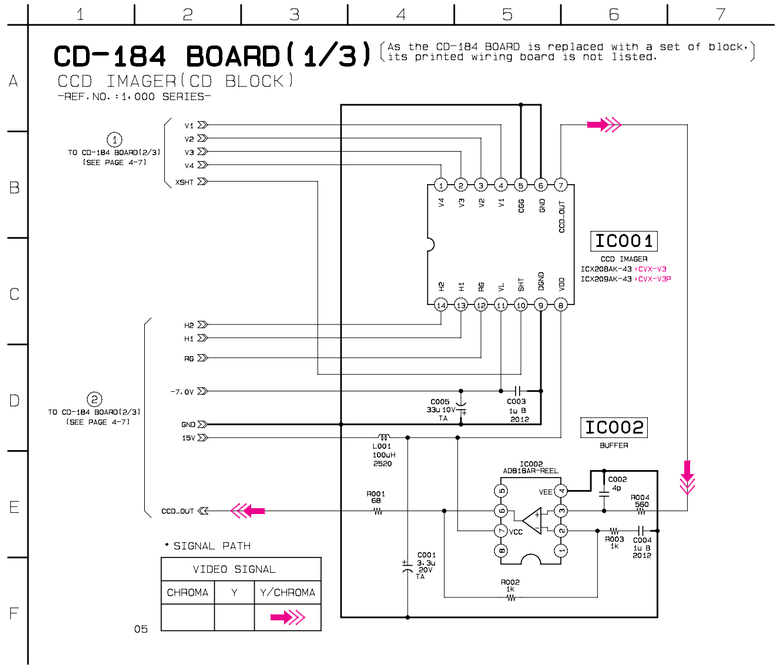


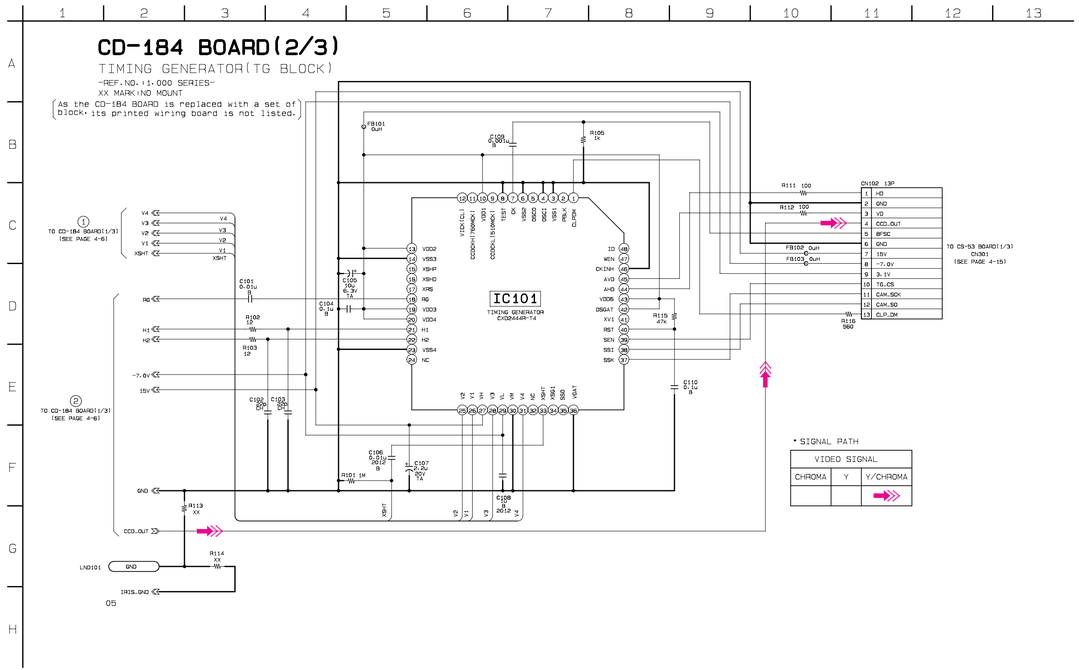
Fig.b (Picture on monitor TV)

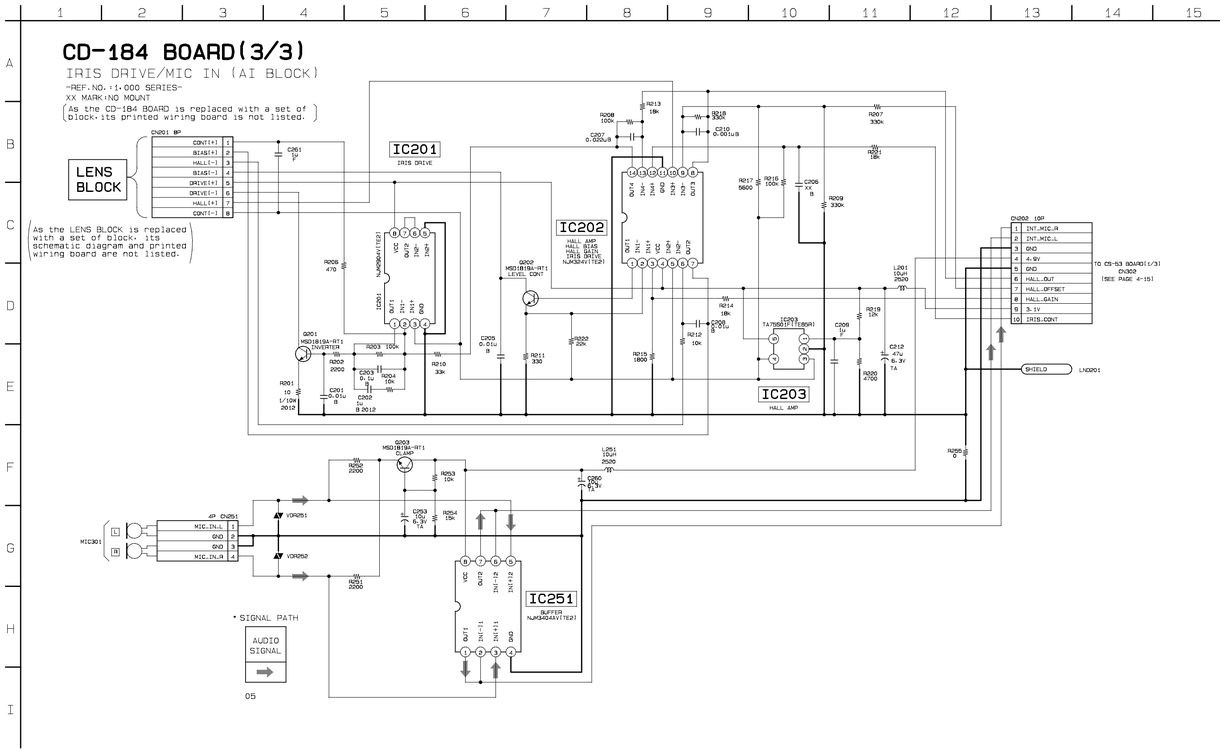
When indicating parts by reference number, please include the board name.

CCD IMAGER
CD-184 (1/3)

CD-184 (CCD IMAGER) SHEMATIC DIAGRAM




CD-184 BOARD(2/3)
TIMING GENERATOR(TG BLOCK)
-REF.NO.:1,000 SERIES-
XX MARK:NO MOUNT
As the CD-184 BOARD is replaced with a set of block, its printed wiring board is not listed.
IC101
TIMING GENERATOR
CXD2444R-T4
TO CD-184 BOARD(1/3) (SEE PAGE 4-6)
TO CD-184 BOARD(1/3) (SEE PAGE 4-6)
TO CS-53 BOARD(1/3) CN301 (SEE PAGE 4-15)
CN102 13P
* SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
GND
CCD_OUT
IRIS_GND
05


CD-184 BOARD(3/3)
IRIS DRIVE/MIC IN (AI BLOCK)
-REF.NO.:1,000 SERIES-
XX MARK:NO MOUNT
As the CD-184 BOARD is replaced with a set of block, its printed wiring board is not listed.
LENS BLOCK
As the LENS BLOCK is replaced with a set of block, its schematic diagram and printed wiring board are not listed.
IC201
IRIS DRIVE
IC202
HALL AMP
IC203
HALL AMP
IC251
BUFFER
CN201 8P
CN202 10P
TO CS-53 BOARD(1/3) CN302 (SEE PAGE 4-15)
SHIELD
LN2201
4P CN251
MIC301
* SIGNAL PATH
AUDIO SIGNAL
05

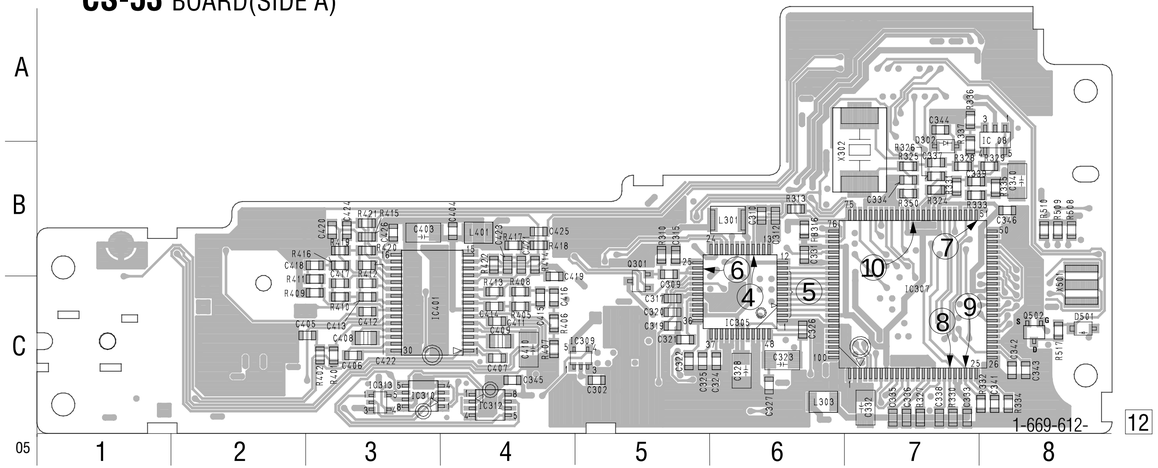
CS-53 (CAMERA, Y/C PROCESS, MIC AMP, MODE CONTROL) PRINTED WIRING BOARD

– Ref. No.: CS-53 board; 1,000 series –

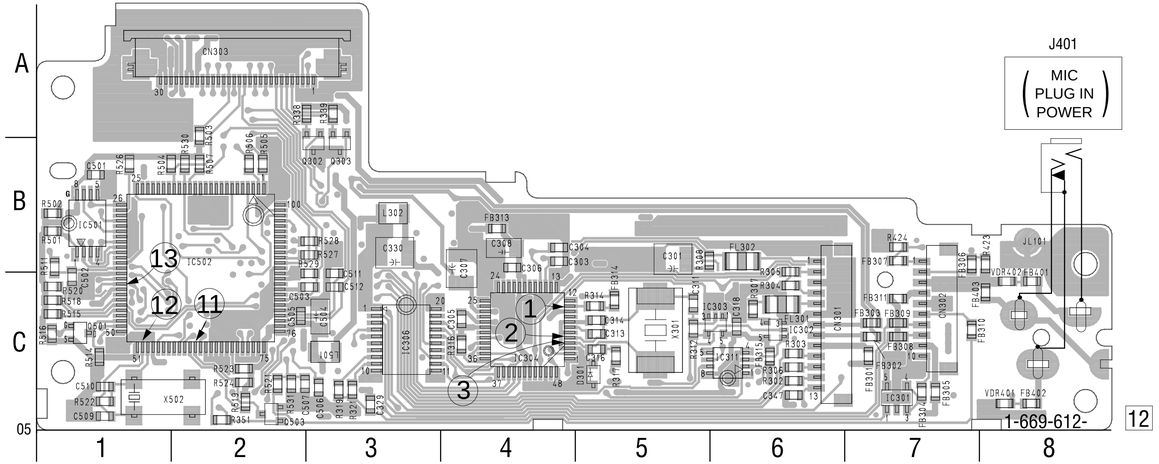
- **For printed wiring board.**
- CS-53 board is 4-layers print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

There are few cases that the part isn't mounted in this model is printed on this diagram.

CS-53 BOARD(SIDE A)



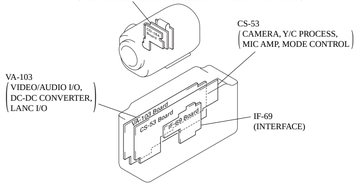
CS-53 BOARD(SIDE B)



CS-53 BOARD (SIDE A)

< CAPACITOR >																			
C302	C-5	C336	C-7	C418	B-3	IC312	C-4	R328	B-7	R418	B-4								
C309	B-5	C337	B-7	C419	B-4	IC313	C-3	R329	B-7	R419	B-3								
C310	B-6	C338	C-7	C420	B-3	IC401	C-4	R330	C-7	R420	B-3								
C312	B-6	C339	B-7	C421	B-4			R331	B-7	R421	B-3								
C315	B-5	C340	B-8	C422	B-3	< COIL >		R332	C-7	R422	B-4								
C317	C-5	C341	C-7	C423	B-4			R334	C-8	R508	B-8								
C319	C-5	C342	C-8	C424	B-3	L301	B-6	R335	B-8	R509	B-8								
C320	C-5	C343	C-8			L303	C-6	R350	B-7	R510	B-8								
C321	C-5	C403	B-3	< DIODE >		L401	B-4	R401	C-3	R517	C-8								
C322	C-5	C404	B-4					R402	C-3										
C323	C-6	C405	C-2	D302	A-7	< TRANSISTOR >		R405	C-4	< VIBRATOR >									
C324	C-5	C406	C-3	D501	C-8			R406	C-4										
C325	C-5	C407	C-4			Q301	C-5	R407	C-4	X302	B-6								
C326	C-6	C408	C-3	< FERRITE BEAD >		Q502	C-8	R408	C-4	X501	C-8								
C327	C-6	C409	C-4					R409	C-3										
C328	C-6	C410	C-4	FB316	B-6	< RESISTOR >		R410	B-3										
C331	B-6	C411	C-4					R411	C-3										
C332	C-7	C412	C-3	< IC >		R310	B-5	R412	C-3										
C333	C-7	C413	C-3			R313	B-6	R413	C-4										
C334	B-7	C414	C-4	IC305	C-6	R324	B-7	R414	B-4										
C335	C-7	C415	C-4	IC307	C-7	R325	B-7	R415	B-3										
		C416	C-4	IC309	C-5	R326	B-7	R416	C-3										
		C417	C-3	IC310	C-3	R327	C-7	R417	B-4										

LENS (CD) PC BOARD ASSEMBLY
(CD-184)
(CCD IMAGER, TIMING GENERATOR, IRIS DRIVE, MIC IN)



CS-53 BOARD (SIDE B)

< CAPACITOR >		C512	C-3	FB402	C-8	< COIL >		R321	C-3	R529	B-2
C301	B-5			FB403	C-7			R338	A-2	R530	B-2
C305	C-4	< CONNECTOR >				L302	B-3	R339	A-3		
C306	B-4	CN301	C-7	< FILTER >		L501	C-3	R501	B-1	< VARISTOR >	
C308	B-4	CN302	C-7	FL301	C-6			R502	B-1		
C311	C-5	CN303	A-2	FL302	B-6	< TRANSISTOR >		R503	A-2	VDR401	C-8
C313	C-5					Q302	B-3	R504	B-1	VDR402	C-8
C314	C-5	< FERRITE BEAD >		< IC >		Q303	B-3	R505	B-2		
C316	C-5	FB301	C-7			Q501	C-1	R506	B-2	< VIBRATOR >	
C318	C-6	FB302	C-7	IC301	C-7			R507	B-2		
C329	C-3	FB303	C-7	IC302	C-6	< RESISTOR >		R511	B-1	X301	C-5
C330	B-3	FB304	C-7	IC303	C-6	R302	C-6	R514	C-1	X502	C-1
C347	C-6	FB305	C-7	IC304	C-4	R303	C-6	R515	C-1		
C501	B-1	FB306	B-7	IC306	C-3	R304	C-6	R516	C-1		
C502	C-1	FB307	B-7	IC311	C-6	R305	B-6	R518	C-1		
C503	C-2	FB308	C-7	IC501	B-1	R306	C-6	R519	C-2		
C504	C-3	FB309	C-7	IC502	B-2	R307	C-6	R520	C-1		
C505	C-2	FB310	C-7			R308	B-5	R521	C-2		
C506	C-3	FB311	C-7	< JACK >		R312	C-5	R522	C-1		
C507	C-3	FB313	B-4			R314	C-5	R523	C-2		
C509	C-1	FB314	C-5	J401	C-8	R316	C-4	R524	C-2		
C510	C-1	FB315	C-6			R317	C-5	R526	B-1		
C511	B-3	FB401	C-8			R319	C-3	R527	B-3		

CS-53 BOARD(1/3)

CAMERA, Y/C PROCESS(CAM BLOCK)

XX MARK:NO MOUNT
NO MARK:CAMERA ON MODE

IC312 IC313 PHASE ADJUST
IC302 PHASE ADJUST
IC303 PHASE ADJUST
IC311 PHASE ADJUST
IC310 PHASE ADJUST
IC304 TIMING GENERATOR
IC309 PHASE ADJUST
IC307 CAMERA Y/C PROCESS
IC305 S/H AGC A/D CDS/ CLAMP/ AGC/ADJUSTING
IC306 D/A CONVERTER
IC301 BUFFER

CN301 13P
CN102 (SEE PAGE 4-61)
CN202 10P (SEE PAGE 4-107)
LS127
CN303 30P CS13H
TO VA-103 BOARD(3/3) (SEE PAGE 4-90)
TO CS-53 BOARD(2/3) (SEE PAGE 4-201)
TO CS-53 BOARD(3/3) (SEE PAGE 4-231)
TO CS-53 BOARD(3/3) (SEE PAGE 4-241)

• SIGNAL PATH

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	

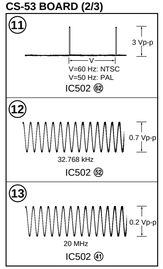
4-15 4-16 4-17

CS-53 BOARD (1/3)

①	1.8 Vp-p	⑥	1.0 Vp-p
14.318 MHz: NTSC 14.187 MHz: PAL			
IC304 ⑪		IC305 ㉘	
②	0.8 Vp-p	⑦	3 Vp-p
28.636 MHz		V=60 Hz: NTSC V=50 Hz: PAL	
IC304 ⑤		IC307 ㉛	
③	0.8 Vp-p	⑧	0.6 Vp-p
28.636 MHz: NTSC 28.375 MHz: PAL			
IC304 ④		IC307 ㉜	
④	0.9 Vp-p	⑨	0.9 Vp-p
14.318 MHz: NTSC 14.187 MHz: PAL			
IC305 ⑯		IC307 ㉝	
⑤	3.2 Vp-p	⑩	PAL 2.3 Vp-p
0.14 usec		17.734475 MHz	
IC305 ② – ⑯		IC307 ㊸	

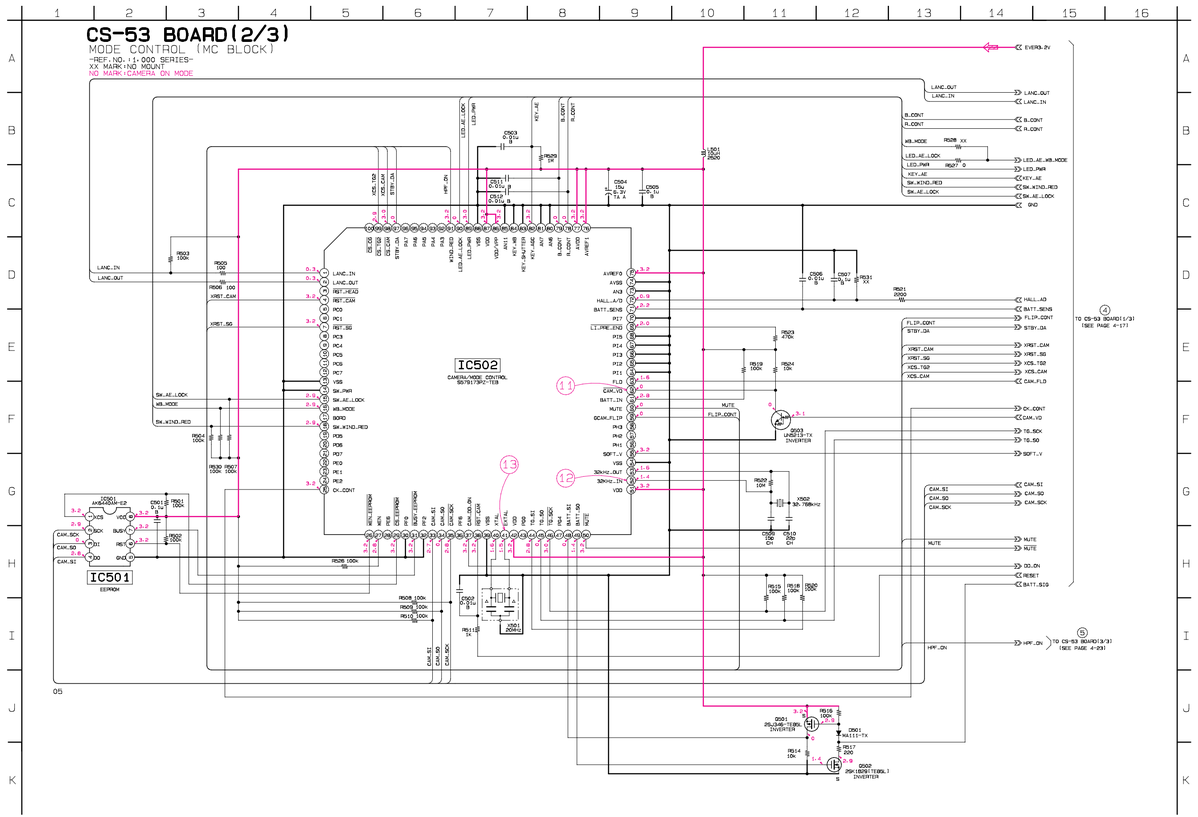
NTSC model: CVX-V3
PAL model : CVX-V3P

CS-53 BOARD (2/3)

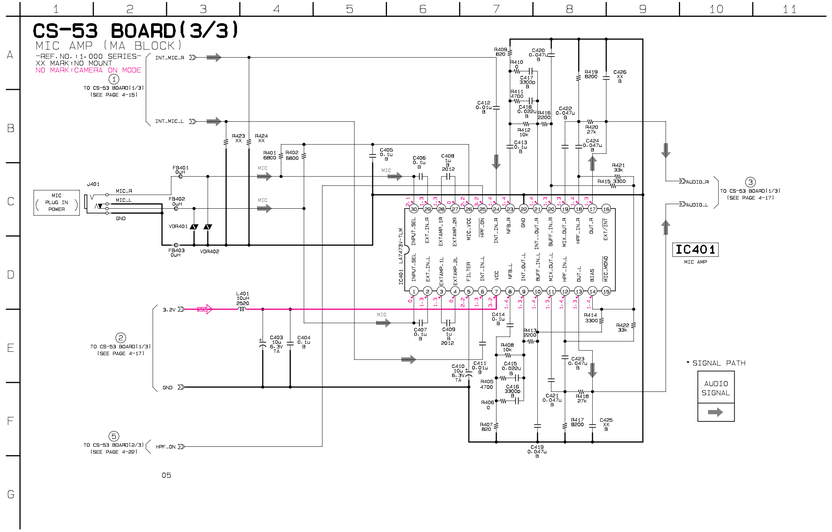


NTSC model: CVX-V3
PAL model : CVX-V3P

CS-53 (MODE CONTROL) SCHEMATIC DIAGRAM • See page 4-11 for CS-53 BOARD printed wiring board.



CS-53 (MIC AMP) SCHEMATIC DIAGRAM • See page 4-11 for CS-53 BOARD printed wiring board.

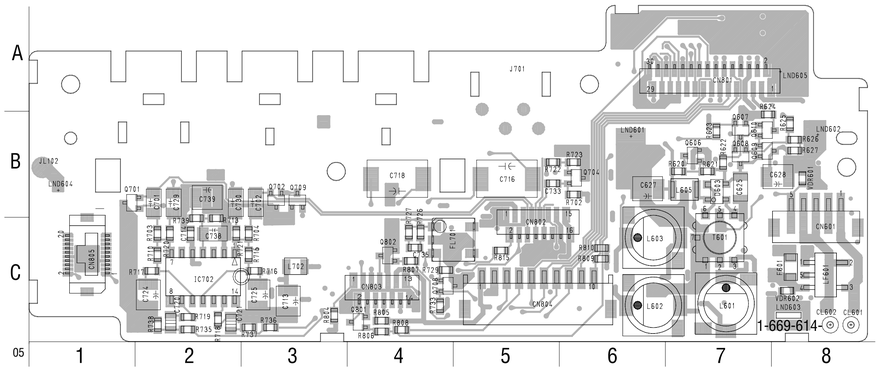


VA-103 (DC-DC CONVERTER, VIDEO/AUDIO I/O, LANC I/O), IF-69 (INTERFACE) PRINTED WIRING BOARDS
– Ref. No.: VA-103 board; 1,000 series, IF-69 board; 1,000 series –

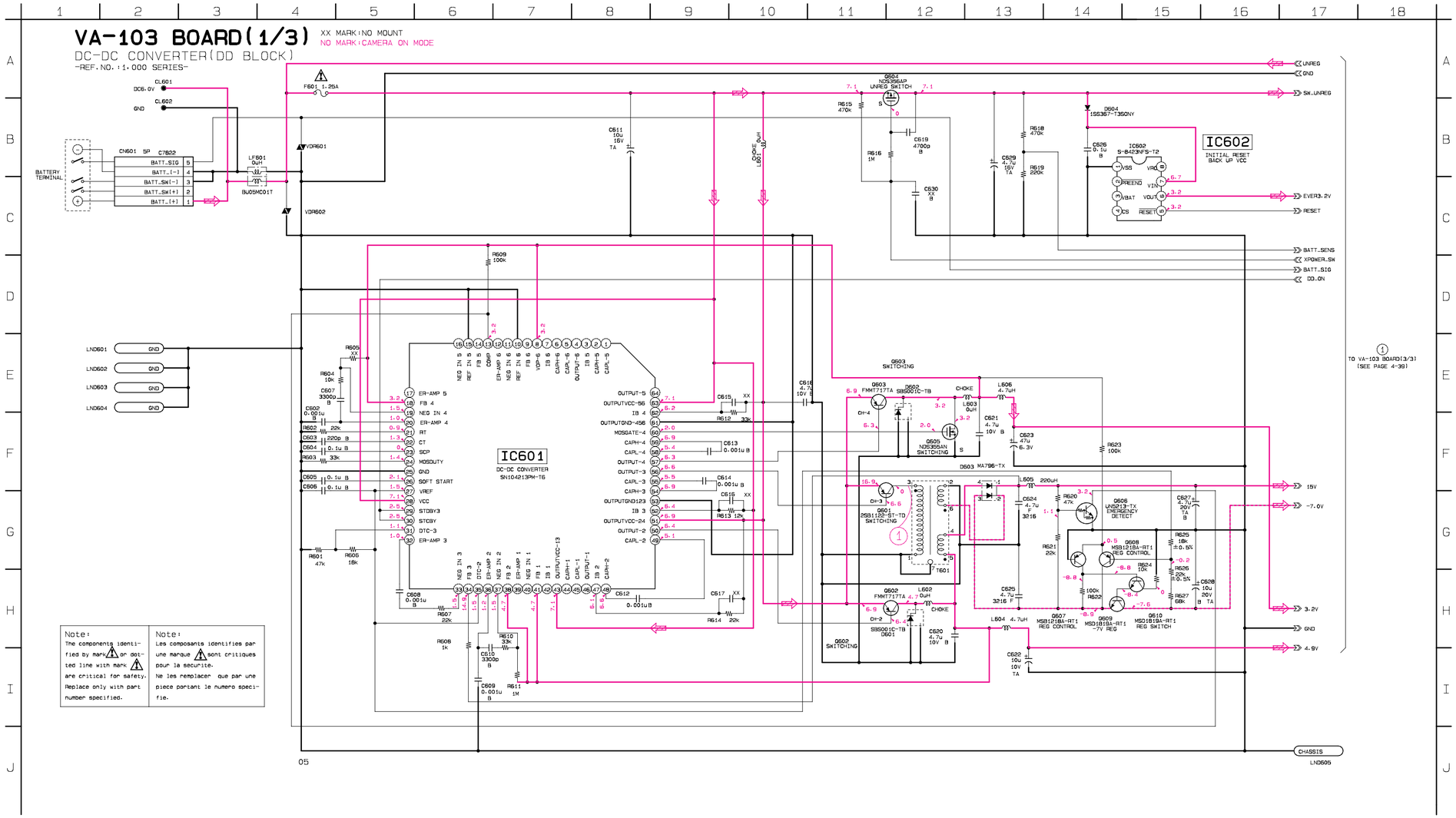
- **For printed wiring boards.**
- VA-103 board is 4-layers print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

There are few cases that the part isn't mounted in this model is printed on this diagram.

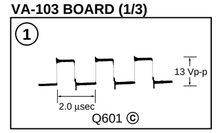
VA-103 BOARD(SIDE A)



VA-103 (DC-DC CONVERTER) SCHEMATIC DIAGRAM

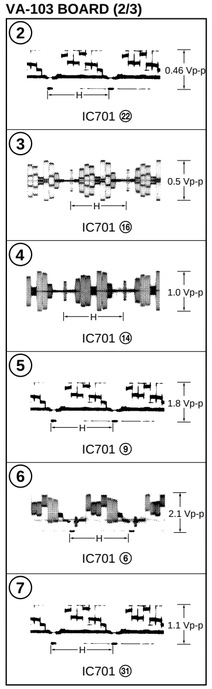


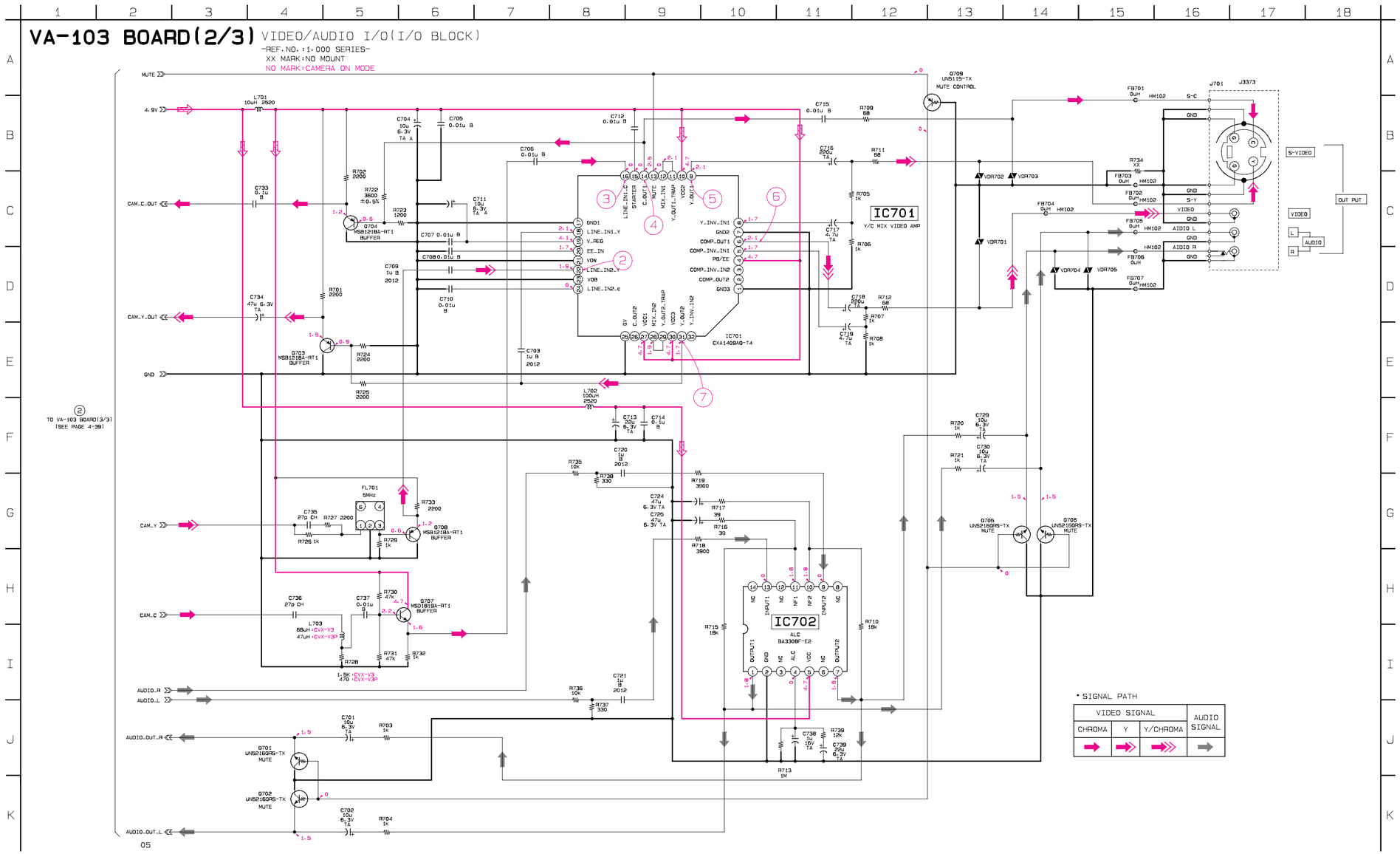
VA-103 BOARD (1/3)



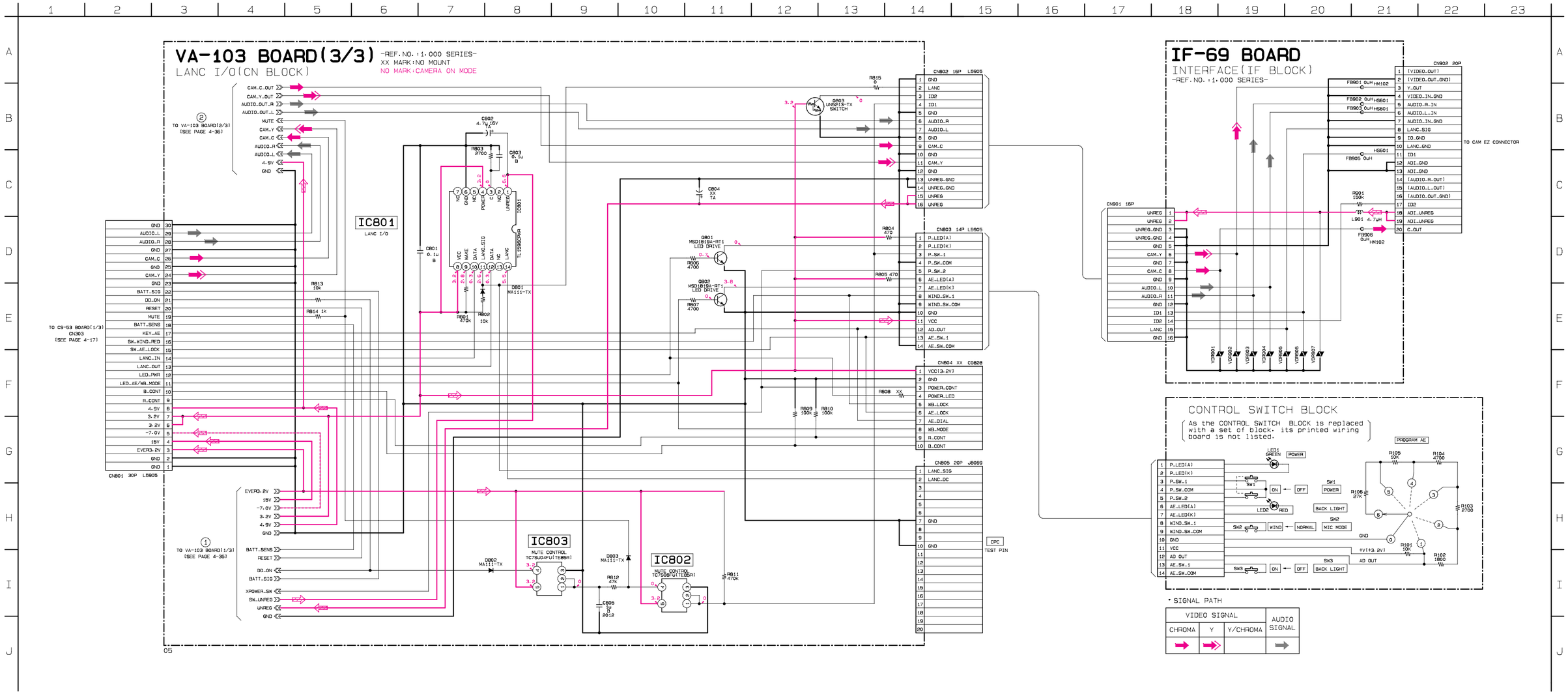
VA-103 (VIDEO/AUDIO I/O) SCHEMATIC DIAGRAM • See page 4-28 for VA-103 BOARD printed wiring board.

VA-103 BOARD (2/3)





VA-103 (LANC I/O), IF-69 (INTERFACE) SCHEMATIC DIAGRAMS • See page 4-28 for VA-103 BOARD and IF-69 BOARD printed wiring boards.



SECTION 5
ADJUSTMENTS

5-1. CAMERA SECTION ADJUSTMENT

NTSC model: CVX-V3
PAL model : CVX-V3P

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

- Oscilloscope
- Regulated power supply
- Vectorscope
- Frequency counter
- Color monitor
- Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0 ND filter 0.3	J-6080-808-A J-6080-818-A	White balance check White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded). Note	J-6082-053-B	
J-6	Clear chart for pattern box	J-6080-621-A	
J-7	CPC-5 jig	J-6082-351-A	For adjusting the video section

Note: If the microprocessor IC in the adjustment remote commander is not the new microprocessor (UPD7503G-C56-12), the pages cannot be switched.
In this case, replace with the new microprocessor (8-759-148-35).

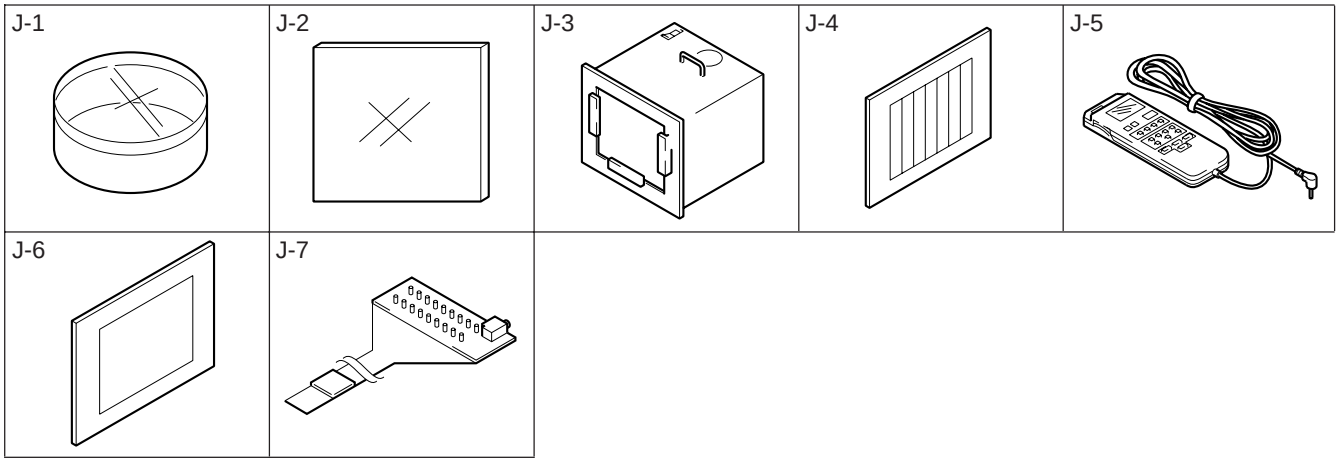


Fig. 5-1-1

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

1) Connect the equipment for adjustments according to Fig. 5-1-3.
2) Connect the adjustment remote commander to the CN805 on the VA-103 board via CPC-5 (J-6082-351-A).

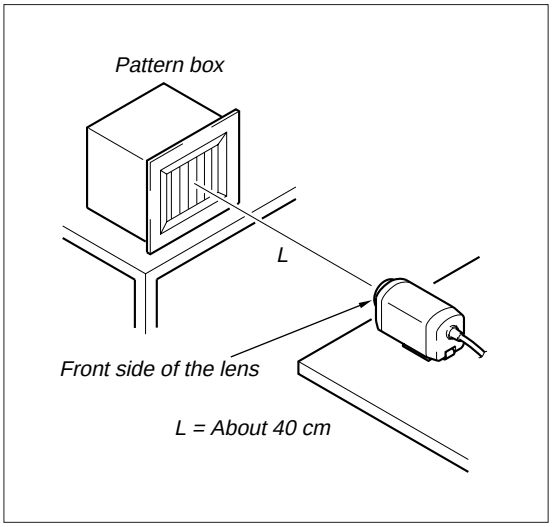
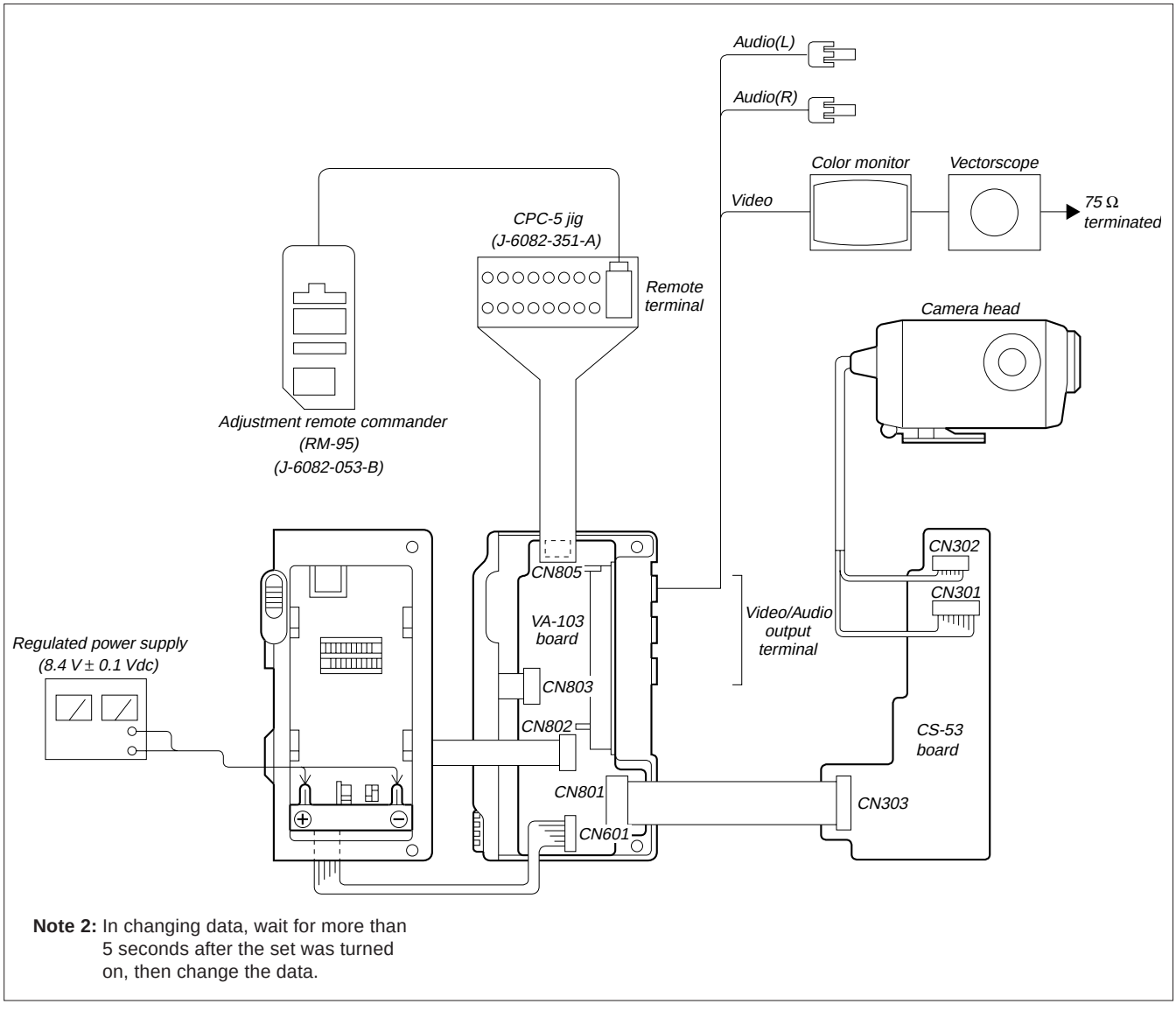


Fig. 5-1-2



Note 2: In changing data, wait for more than 5 seconds after the set was turned on, then change the data.

Fig. 5-1-3

1-1-3. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. POWER switch (Control switch block) ..... ON
2. BACK LIGHT switch (Control switch block) .... OFF
3. PROGRAM AE dial (Control switch block) ..... AUTO

2. Order of Adjustments

Basically carry out adjustments in the order given.

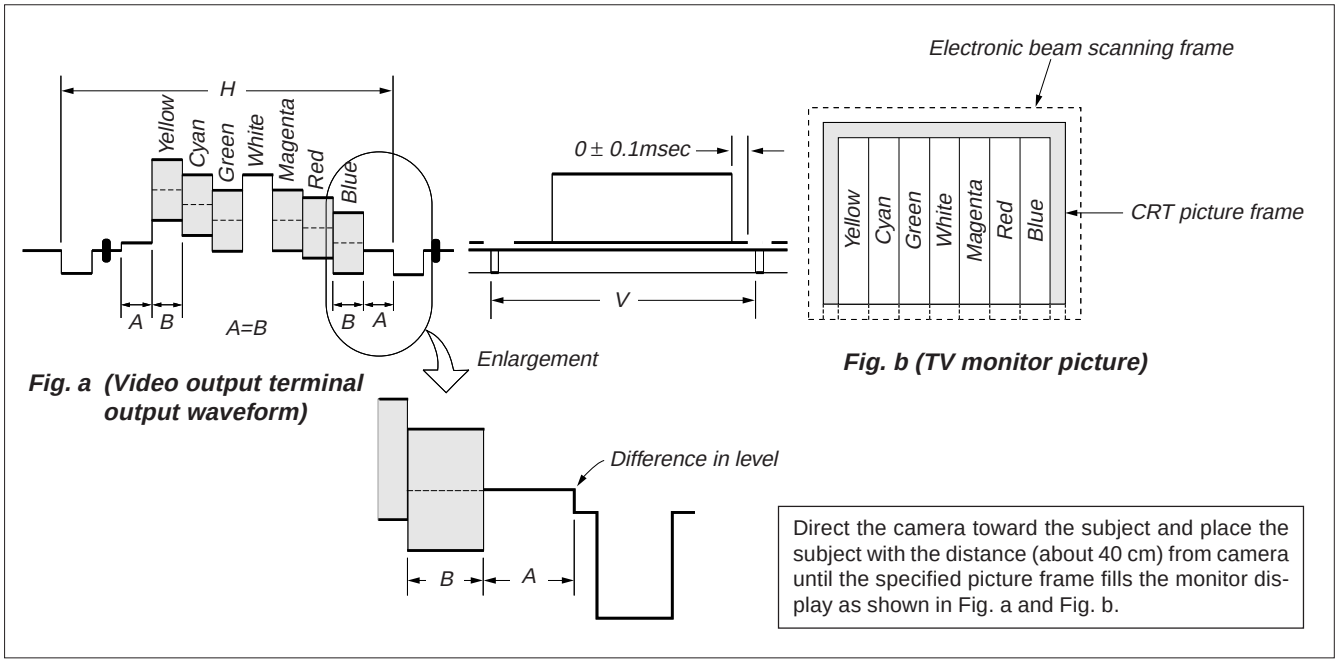


Fig. a (Video output terminal output waveform)

Fig. b (TV monitor picture)

Fig. 5-1-4

3. Subjects

1) Color bar chart (Standard picture frame).
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Standard picture frame)
2) Clear chart (Standard picture frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)

1-1-4. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the CN805 on the VA-103 board via CPC-5 (J-6082-351-A).
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-1-5.

Fig. 5-1-5

3) Operate the adjustment remote commander as follows.

- Changing the page
  The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Table. 5-1-1

- Changing the address
  The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
- Changing the data (Data setting)
  The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
- Writing the adjustment data
  The PAUSE button must be pressed to write the adjustment data (F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)

4) After completing all adjustments, turn off the main power supply (8.4V) once.

2. Precautions Upon Using The Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

1-1-5. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Upper digit of hexadecimal \ Lower digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d) ②	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-1-2

1-2. INITIALIZATION OF F PAGE DATA

1. Initializing the F Page Data

Note: If the F page data has been initialized, "Modification of F PAGE Data" and the camera system adjustments need to be performed again.

Adjustment page	F
Adjustment Address	00 to FF

Initializing Method:

1) Select page: 6, address: 02, and check that the data is "00".
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 00, set data: 2D (NTSC) or data: 2F (PAL), and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 01, set data: 2D (NTSC) or data: 2F (PAL), and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 02, and check that the data is "01".
6) Select page: 3, address: 00, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.
9) Perform "Modification of F Page Data".

2. Modification of F PAGE Data

If the F PAGE data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

Note: If copy the data built in the different model, the this unit may not operate.

3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.
5) After changing the data, select page: 0, address: 01, and set data: 00.

3. F Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of F PAGE Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10			Fixed data1
11			(Initialized data)
12			
13			
14			Fixed data2
15			Fixed data1
16			(Initialized data)
17			Fixed data2
18			
19			Fixed data1
1A			(Initialized data)
1B			
1C			
1D			
1E			Fixed data2
1F			Fixed data1
20			(Initialized data)
21			
22			
23			Fixed data2
24			Fixed data1
25			(Initialized data)
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30	18	18	Auto White Balance
31	3D	3D	Reference Data Input
32	21	21	
33	39	39	
34	24	24	
35			Fixed data1
36			(Initialized data)
37			
38			
39			
3A			
3B			
3C			
3D			Fixed data2
3E			Fixed data1

Address	Initial value		Remark
	NTSC	PAL	
3F	20	20	28MHz Origin Oscillation Adj.
40	80	80	HALL Adj.
41	80	80	
42			Fixed data2
43			Fixed data1
44	1B	1B	Color Reproduction Adj.
45			Fixed data1
46	42	42	Color Reproduction Adj.
47			Fixed data1
48			(Initialized data)
49			
4A	89	89	Auto White Balance Adj.
4B	59	59	
4C	38	38	IRIS IN/OUT Adj.
4D	41	41	
4E			Fixed data2
4F			
50			
51			Fixed data1
52			(Initialized data)
53			
54			
55			
56			
57			
58	94	94	Battery Down Adj.
59	9B	9B	
5A	B3	B3	
5B	C8	C8	
5C	D3	D3	
5D			Fixed data1
5E			(Initialized data)
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			
70			
71			
72			
73			
74			
75			

Address	Initial value		Remark
	NTSC	PAL	
76			Fixed data1
77			(Initialized data)
78			
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
8A			
8B			
8C			
8D			
8E			
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			Fixed data2
9F			
A0			Fixed data1
A1			(Initialized data)
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
AA	FD	FD	Color Reproduction Adj.
AB	F6	F4	
AC			Fixed data1

Address	Initial value		Remark
	NTSC	PAL	
AD	Fixed data1 (Initialized data)		
AE			
AF			
B0			
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0			
E1			
E2			
E3			

Address	Initial value		Remark
	NTSC	PAL	
E4	Fixed data1 (Initialized data)		
E5			
E6			
E7			
E8			
E9			
EA			
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			
F3			
F4			
F5			
F6			
F7			
F8			
F9			
FA			
FB			
FC			
FD			
FE			
FF	Fixed data2		

Table. 5-1-3

1-3. CAMERA SYSTEM ADJUSTMENTS

1. 28 MHz Origin Oscillation Adjustment (CS-53 board)

Set the frequency of the clock for synchronization. If deviated, the synchronization will be disrupted and the color will become inconsistent.

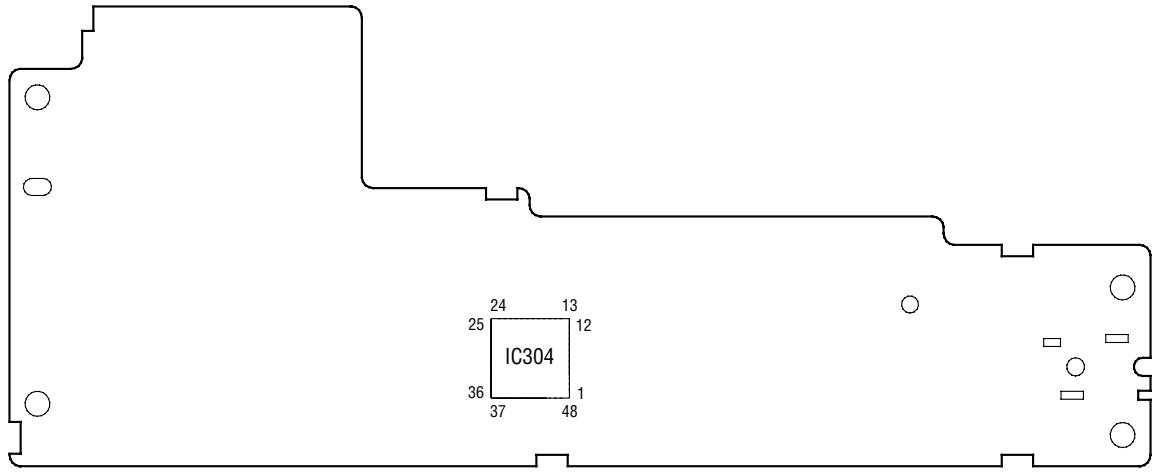
Subject	Not required
Measurement Point	Pin ⑫ of IC304
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	3F
Specified Value	f=14318181 ± 68 Hz (NTSC) f=14187500 ± 69 Hz (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 3F, change the data and set the clock frequency (f) to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

• PARTS LOCATION DIAGRAM FOR 28 MHz ORIGIN OSCILLATION ADJUSTMENT

CS-53 BOARD (SIDE B)



2. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and offset.

Subject	Not required
Measurement Point	Page 1 displayed data of the adjustment remote commander. (Note 3)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	40, 41
Specified Value	13 to 17 (Note 1) 7C to 80 (Note 2)

Note 1: Select page: 2, address: 01, set data: 01, and press the PAUSE button of the adjustment remote commander.

Note 2: Select page: 2, address: 01, set data: 03, and press the PAUSE button of the adjustment remote commander.

Note 3: The right two digits of the page 1 displayed data of the adjustment remote commander.

1 00 XX
└──── Object data

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 03, and set data: 03.
3) Select page: 2, address: 01, set data: 03, and press the PAUSE button of the adjustment remote commander.
4) Select page: F, address: 40, set data: 40, and press the PAUSE button of the adjustment remote commander.
5) Read the page 1 displayed data (Note 3), and this data is named W_2.
6) Select page: F, address: 40, set data: 30, and press the PAUSE button of the adjustment remote commander.
7) Read the page 1 displayed data, and this data is named W_1.
8) Select page: 2, address: 01, set data: 01, and press the PAUSE button of the adjustment remote commander.
9) Read the page 1 displayed data, and this data is named K_1.
10) Select page: F, address: 40, set data: 40, and press the PAUSE button of the adjustment remote commander.
11) Read the page 1 displayed data, and this data is named K_2.
12) Convert W_1, W_2, K_1, K_2, to decimal notation, and obtain W_1' , W_2' , K_1' , K_2'. (Refer to "Table 5-1-2. Hexadecimal-decimal Conversion Table".)
13) Calculate X_1' using the following equations (decimal notation calculation).
$A' = W_2' + K_1' - W_1' - K_2'$ ..... Equation 1
$B' = W_1' - K_1'$ ..... Equation 2
$X_1' = [1680 + (48 \times A') - (16 \times B')]/A'$ ..... Equation 3
14) Convert X_1' to hexadecimal notation, and obtain X_1. (Round off to one decimal place)
15) Select page: F, address: 40, set data: X_1, and press the PAUSE button of the adjustment remote commander.
16) Select page: F, address: 41, change the data and adjust the page 1 displayed data to "15".
17) Press the PAUSE button of the adjustment remote commander.
18) Select page: 2, address: 01, set data: 03, and press the PAUSE button of the adjustment remote commander.
19) Read the page 1 displayed data, and this data is named W_0. If W_0 lies within the "7C" to "80" range, perform "Processing after completing adjustments". If it is lies outside the range, perform the following adjustments.
20) Convert W_0 to decimal notation, and obtain W_0'.
21) Calculate X_2' using the following equations (decimal notation calculation).
$C' = W_0 - B' - 21$ ..... Equation 4
$X_2' = [(105 - B') \times (X_1' - 48) + (48 \times C')]/C'$ ..... Equation 5
(X_1' and B' are values obtained from equations 2) and 3))
22) Convert X_2' to hexadecimal notation, and obtain X_2. (Round off to one decimal place)
23) Select page: F, address: 40, set data: X_2, and press the PAUSE button of the adjustment remote commander.
24) Select page: F, address: 41, change the data and adjust the page 1 displayed data to "7E".
25) Press the PAUSE button of the adjustment remote commander.
26) Select page: 2, address: 01, set data: 01, and press the PAUSE button of the adjustment remote commander.
27) Check the page 1 displayed data lies within the "13" to "17" range.

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 03, and set data: 00.
3) Select page: 0, address: 01, and set data: 00.

3. Picture Frame Setting

Subject	Color bar chart standard picture frame (About 40 cm from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A = B, C = D, t = 0 ± 0.1 msec

Setting method:

1) Adjust the camera direction and zoom, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color bar chart standard picture frame”.

Check on the oscilloscope

1. Horizontal period

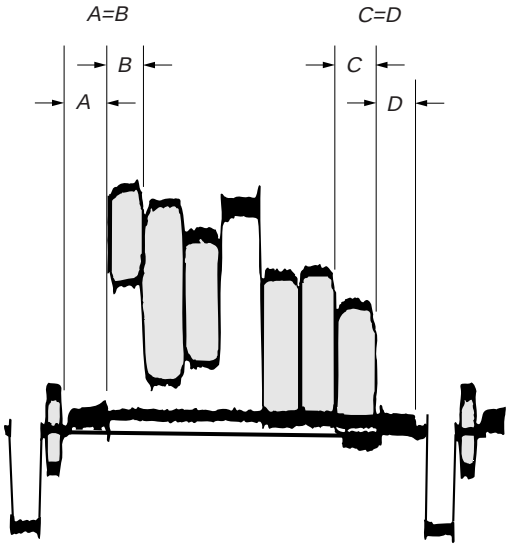


Fig. 5-1-6

2. Vertical period

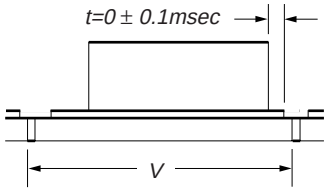


Fig. 5-1-7

Color on the TV monitor

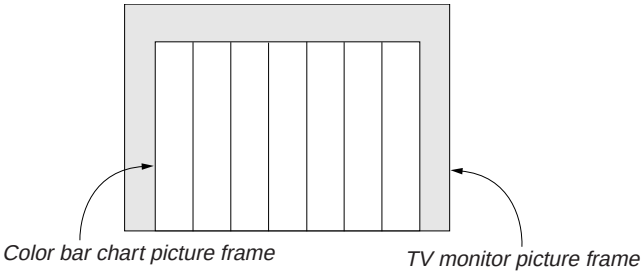


Fig. 5-1-8

4. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	44, 46, AA, AB
Specified Value	All color luminance points should settle within each color reproduction frame.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 01, set data: 3D, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: 1A, set data: 3F, and press the PAUSE button of the adjustment remote commander.
4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
5) Change the data of page: F, address: 44, 46, AA and AB, and settle each color luminance point in each color reproduction frame.

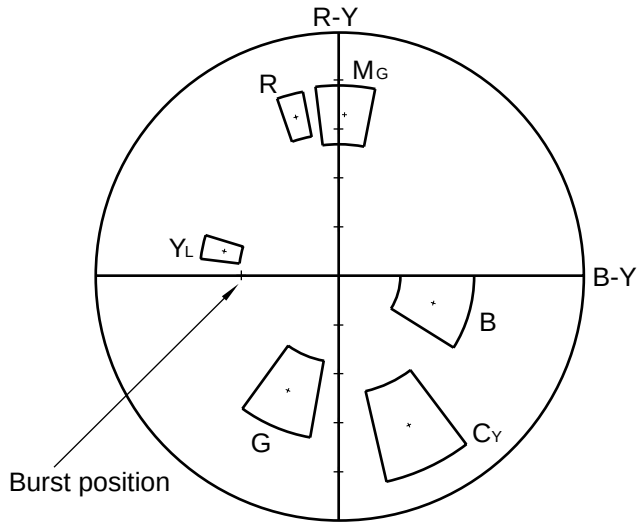
Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

6) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: 2, address: 01, and set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL mode

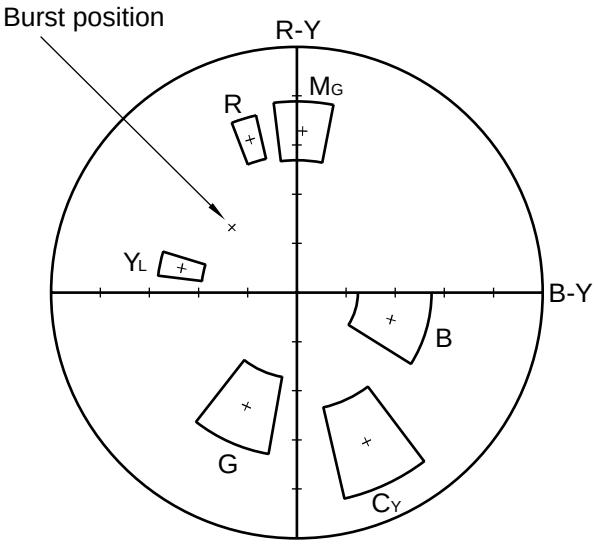


Fig. 5-1-9

5. IRIS IN/OUT Adjustment

Measure the light level and write into EEPROM for indoor/outdoor identification in auto white balance.
If it is not correct, white balance will be incorrect from standard position.

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	Page1 displayed data of the adjustment remote commander (Note 1)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	4C, 4D

Note 1: The right four digits of the page1 displayed data of the adjustment remote commander.

1 XX XX
- Bottom 2 digits
- Upper 2 digits

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 03, and set data: 06.
3) Select page: 2, address: 40, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 41, set data: 01, and press the PAUSE button of the adjustment remote commander.
5) Select page: 2, address: 01, set data: 0B, and press the PAUSE button of the adjustment remote commander.
6) Read the page1 displayed data (Note 1) , and upper two digits data is named D_1, and bottom two digits data is named D_2.
7) Convert D_1 to decimal notation, and obtain D_1'.
   (Refer to " Table 5-1-2. Hexadecimal-decimal Conversion Table ".)
8) Calculate D_3' using the following equations (decimal notation calculation).
   $D_2 \geqq D0$
   $D_3' = D_1' - 21$ ..... Equation 1
   $D_2 < D0$
   $D_3' = D_1' - 22$ ..... Equation 2
9) Convert D_3' to hexadecimal notation, and obtain D_3.
10) Select page: F, address: 4C, set data: D_3, and press the PAUSE button of the adjustment remote commander.
11) Select page: 2, address: 01, set data: 09, and press the PAUSE button of the adjustment remote commander.
12) Read the page1 displayed data (Note 1) , and upper two digits data is named D_4, and bottom two digits data is named D_5.
13) Convert D_4 to decimal notation, and obtain D_4'.
14) Calculate D_6' using the following equations (decimal notation calculation).
    $D_5 \geqq F0$
    $D_6' = D_4' - 13$ ..... Equation 3
    $D_5 < F0$
    $D_6' = D_4' - 14$ ..... Equation 4
15) Convert D_6' to hexadecimal notation, and obtain D_6.
16) Select page: F, address: 4D, set data: D_6, and press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 2, address: 41, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 40, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 03, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

6. Auto White Balance Reference Data Input

Subject	Clear chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	30 to 34

Note 1: Perform "Color Reproduction Adjustment" before this adjustment.

Note 2: Check that the data of page: 2, address: 02 is 00. If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 40, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 41, set data: 01, and press the PAUSE button of the adjustment remote commander.
4) Shoot the clear chart with the color bar standard picture frame, and wait for 2 seconds.
5) Select page: 2, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
6) Select page: 2, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
   (When the standard data is take in, the data will be automatically input to page: F, address: 30 to 34.)
7) Select page: 2, address: 02, and check that the data is "01".

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 2, address: 41, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 40, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.
5) Perform "Auto White Balance Adjustment".

7. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Page 1 displayed data of the adjustment remote commander (Note 2)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	4A, 4B
Specified Value	R ratio: 2B40 to 2BC0 B ratio: 5E40 to 5EC0

Note 1: Perform "Auto White Balance Reference Data Input" before this adjustment.

Note 2: The right four digits of the page 1 displayed data of the adjustment remote commander.

1 XXXX
└── Object data

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 2, address: 40, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 41, set data: 01, and press the PAUSE button of the adjustment remote commander.
5) Select page: 2, address: 01, set data: 3F, and press the PAUSE button of the adjustment remote commander.
6) Select page: 0, address: 03, and set data: 04.
7) Select page: F, address: 4A, change the data and adjust the average value of the page 1 displayed data (Note 2) to the R ratio specified value.
8) Press the PAUSE button of the adjustment remote commander.
9) Select page: 0, address: 03, and set data: 05.
10) Select page: F, address: 4B, change the data and adjust the average value of the page 1 displayed data (Note 2) to the B ratio specified value.
11) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 2, address: 41, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 40, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 03, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.

8. White Balance Check

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-10. (A) to (C)

Checking method:

1) Check that the lens is not covered with either filter.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 2, address: 40, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 41, set data: 01, and press the PAUSE button of the adjustment remote commander.
5) Select page: 2, address: 01, set data: 0F, and press the PAUSE button of the adjustment remote commander.
6) Check that the center of the white luminance point is within the circle shown Fig. 5-1-10 (A).
7) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 2, address: 01, set data: 23, and press the PAUSE button of the adjustment remote commander.
9) Place the C14 filter on the lens.
10) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-10 (B).
11) Remove the C14 filter, and place the ND filter 1.3 (1.0 + 0.3) on the lens.
12) Check that the white luminance point stopped moving, and then remove the ND filter 1.3.
13) Check that the center of the white luminance point settles within the circle shown Fig. 5-1-10 (C).

Processing after Completing Adjustments:

1) Select page: 2, address: 41, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 2, address: 40, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

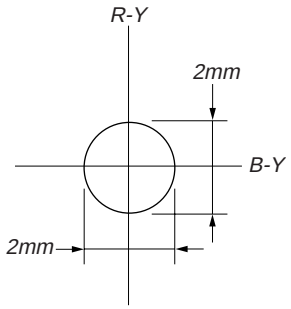


Fig. 5-1-10 (A)

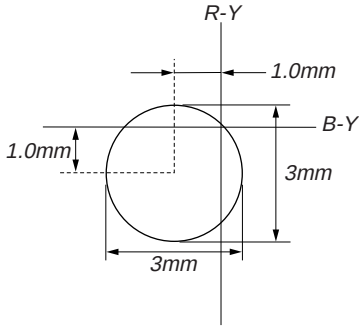


Fig. 5-1-10 (B)

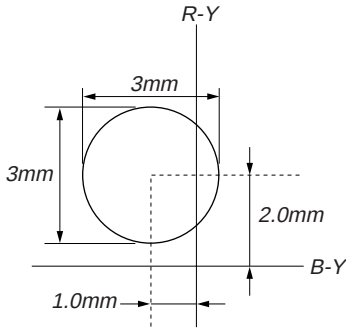


Fig. 5-1-10 (C)

9. Battery Down Adjustment

Set the battery end voltage.

Mode	Camera ON
Subject	Arbitrary
Measurement Point	LCD display of the adjustment remote commander.
Measuring Instrument	Not required
Adjustment Page	F
Adjustment Address	58 to 5C

Connection

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-11.

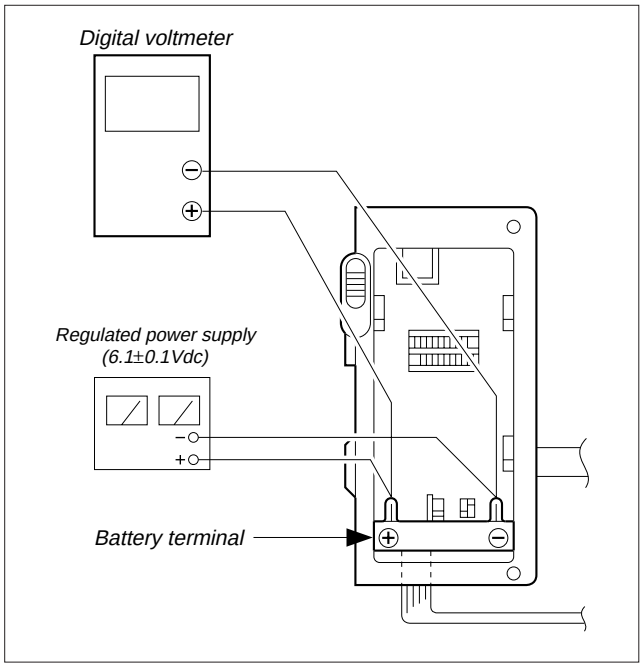


Fig. 5-1-11

Adjusting method:

1) Adjusting the output voltage fo the regulated power supply so that the digital voltmeter display is 6.1 ± 0.1 Vdc.
2) Select page: 0, address: 01, and set data: 01.
3) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.30 ± 0.01 Vdc.
4) Select page: 3, address: 0D, read the data, and this data is named X_0.
5) Convert X_0 to decimal notation, and obtain X_0'.
   (Refer to "Table 5-1-2. Hexadecimal-decimal conversion table".)
6) Calculate X_1', X_2', X_3', and X_4' using follwing equations (decimal calculation).
   Address: 59 $X_1' = X_0' + 8$
   Address: 5A $X_2' = X_0' + 32$
   Address: 5B $X_3' = X_0' + 53$
   Address: 5C $X_4' = X_0' + 64$
7) Convert X_1', X_2', X_3' and X_4' to hexadecimal notation, and obtain X_1, X_2, X_3 and X_4.
8) Select page: F, address: 58, set data: X_0, and press the PAUSE button of the adjustment remote commander.
9) Select page: F, address: 59, set data: X_1, and press the PAUSE button of the adjustment remote commander.
10) Select page: F, address: 5A, set data: X_2, and press the PAUSE button of the adjustment remote commander.
11) Select page: F, address: 5B, set data: X_3, and press the PAUSE button of the adjustment remote commander.
12) Select page: F, address: 5C, set data: X_4, and press the PAUSE button of the adjustment remote commander.
13) Select page: 0, address: 01, and set data: 00.

SECTION 6
REPAIR PARTS LIST

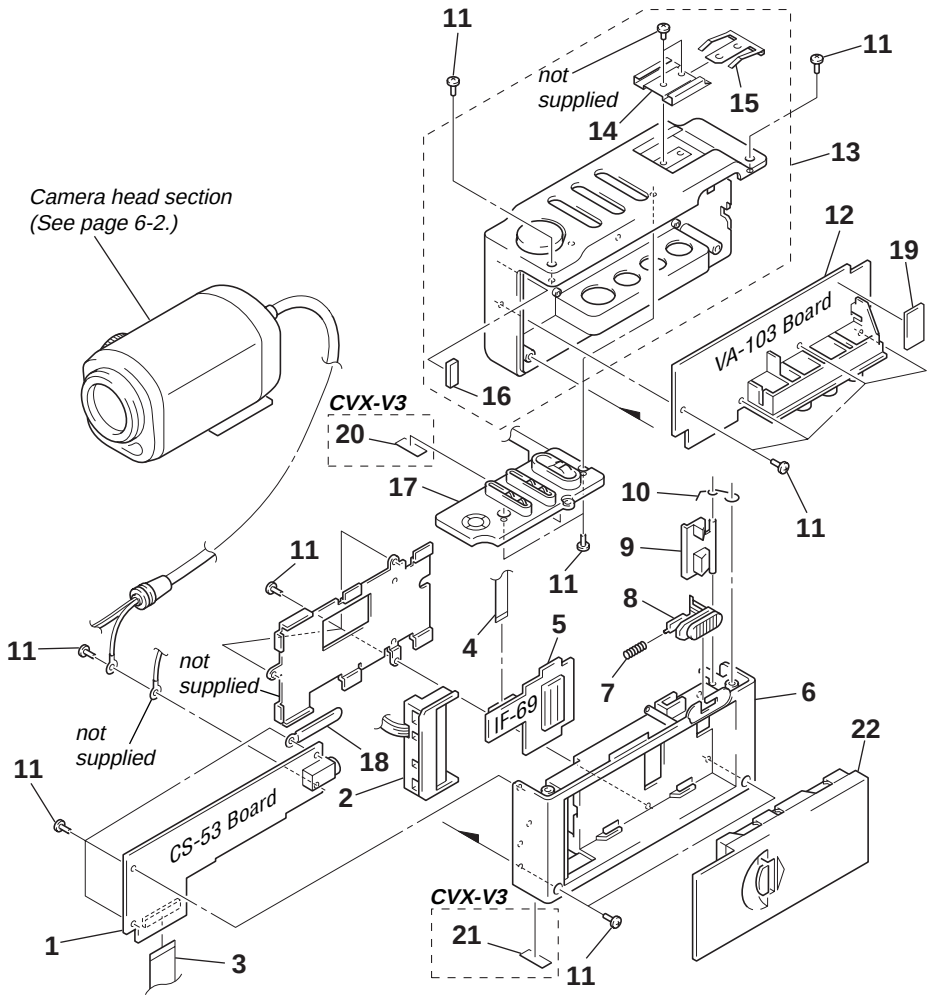
6-1. EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

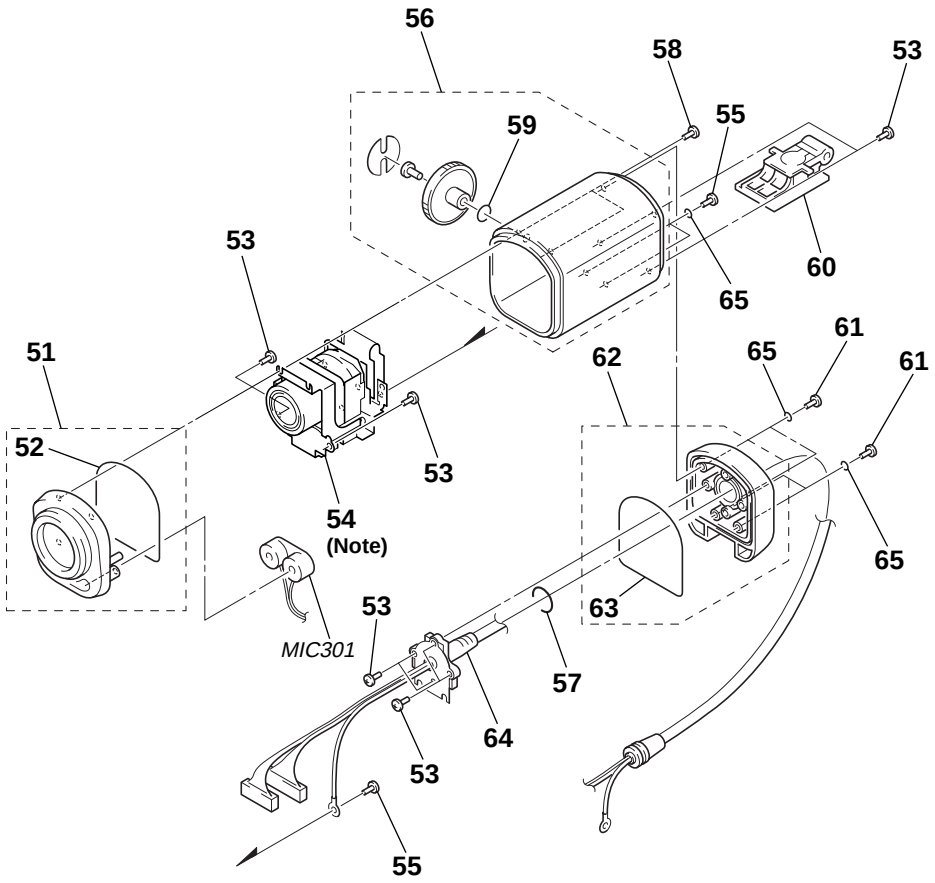
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	A-7073-498-A	CS-53 BOARD, COMPLETE (CVX-V3)	
1	A-7073-690-A	CS-53 BOARD, COMPLETE (CVX-V3P)	
2	1-694-076-21	TERMINAL BOARD, BATTERY	
3	1-783-522-11	CABLE, FLEXIBLE FLAT (FFC-246)	
4	1-783-523-11	CABLE, FLEXIBLE FLAT (FFC-247)	
5	A-7073-499-A	IF-69 BOARD, COMPLETE (CVX-V3)	
5	A-7073-691-A	IF-69 BOARD, COMPLETE (CVX-V3P)	
6	3-989-171-21	CABINET (UPPER)	
7	3-989-179-01	SPRING, COMPRESSION	
8	3-989-173-01	SWITCH, RELEASE	
9	3-989-174-01	LOCK, BATTERY	
10	3-989-181-02	SPRING, TORSION	
11	3-948-339-01	SCREW, TAPPING	
12	A-7073-497-A	VA-103 BOARD, COMPLETE (CVX-V3)	
12	A-7073-689-A	VA-103 BOARD, COMPLETE (CVX-V3P)	
13	X-3949-039-1	CABINET (LOWER) ASSY	
14	3-989-177-01	SHOE	
15	3-989-178-01	SPRING, SHOE LEAF	
16	3-050-798-01	SPACER (VC)	
17	1-475-734-11	SWITCH BLOCK, CONTROL (VC)	
* 18	2-277-426-01	CLAMP	
19	3-052-339-01	CUSHION (A)	
* 20	3-704-437-01	LABEL, CAUTION, FUSE REPLACEMENT	(CVX-V3)
* 21	3-704-367-01	LABEL (CVX-V3)	
22	3-989-676-11	COVER, VC (CONNECTOR COVER)	

6-1-2. CAMERA HEAD SECTION



(Note) The lens (CD) PC board assembly is a mechanical unit which has completely been adjusted in the factory. So never disassemble the lens (CD) PC board assembly.

Ref. No.	Part No.	Description	Remark
51	3-051-119-11	CASE (F) ASSY	
52	3-051-121-11	O RING (F)	
53	3-948-339-01	SCREW, TAPPING	
54	A-7083-709-A	LENS (CD) PC BOARD ASSY (CVX-V3)	
54	A-7083-724-A	LENS (CD) PC BOARD ASSY (CVX-V3P)	
55	3-050-575-11	ACE (M2), BIND SCREW LOCK	
56	3-051-116-11	CASE (M) ASSY (CVX-V3)	
56	3-051-116-21	CASE (M) ASSY (CVX-V3P)	
57	3-989-182-01	O RING (T)	
58	3-050-576-01	TAPPING	
59	3-051-123-11	O RING (D)	
60	3-051-118-11	TABLE ASSY, TRIPOD	
61	3-051-320-11	WAVE (2), BIND SCREW	
62	3-051-117-11	CASE (B) ASSY	
63	3-051-122-11	O RING (B)	
64	1-783-521-12	CORD, CONNECTION	
65	3-956-399-01	O RING (K)	
MIC301	3-051-120-11	MICROPHONE ASSY	

6-2. ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
		CD-184 BOARD, COMPLETE	
		**********	
		(Ref.No.:1,000 Series)	

Note: The parts mounted on this board are not supplied individually for service. These are included in the LENS (CD) PC BOARD ASSY (A-7083-709-A)(CVX-V3) or LENS (CD) PC BOARD ASSY (A-7083-724-A) (CVX-V3P).

	A-7073-498-A	CS-53 BOARD, COMPLETE (CVX-V3)	
		**********	
	A-7073-690-A	CS-53 BOARD, COMPLETE (CVX-V3P)	
		**********	
		(Ref.No.:1,000 Series)	
		< CAPACITOR >	

Ref. No.	Part No.	Description			
C301	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C302	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C305	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C306	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C308	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C309	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C310	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C311	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C312	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C313	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C314	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C315	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C316	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C317	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C318	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C319	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C320	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C321	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C323	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C324	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C325	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C326	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C327	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C328	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C329	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C330	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C331	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C332	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C333	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C334	1-162-917-11	CERAMIC CHIP	15PF	5%	50V (CVX-V3P)
C335	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (CVX-V3P)
C338	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C339	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (CVX-V3P)
C340	1-107-688-11	TANTAL. CHIP	1.5uF	20%	10V (CVX-V3P)
C341	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C342	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C343	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C347	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C403	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C404	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C405	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C406	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C407	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C408	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C409	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C410	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C411	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C412	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C413	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C414	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C415	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C416	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C417	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C418	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C419	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C420	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C421	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C422	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C423	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C424	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C501	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V

CS-53

Ref. No.	Part No.	Description			Remark
C502	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C505	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C507	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C509	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C510	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C512	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN301	1-779-772-11	CONNECTOR 13P			
CN302	1-784-254-11	CONNECTOR 10P			
CN303	1-573-370-21	CONNECTOR, FFC/FPC 30P			
		< DIODE >			
D302	8-719-002-81	DIODE 1T363-01-T8A (CVX-V3P)			
D501	8-719-404-49	DIODE MA111			
		< FERRITE BEAD >			
FB301	1-414-228-11	INDUCTOR CHIP 0UH			
FB302	1-414-228-11	INDUCTOR CHIP 0UH			
FB303	1-414-228-11	INDUCTOR CHIP 0UH			
FB304	1-414-228-11	INDUCTOR CHIP 0UH			
FB305	1-414-228-11	INDUCTOR CHIP 0UH			
FB306	1-414-228-11	INDUCTOR CHIP 0UH			
FB307	1-414-228-11	INDUCTOR CHIP 0UH			
FB308	1-414-228-11	INDUCTOR CHIP 0UH			
FB309	1-414-228-11	INDUCTOR CHIP 0UH			
FB310	1-414-228-11	INDUCTOR CHIP 0UH			
FB311	1-414-228-11	INDUCTOR CHIP 0UH			
FB313	1-414-228-11	INDUCTOR CHIP 0UH			
FB314	1-500-284-21	INDUCTOR CHIP 0UH			
FB315	1-414-228-11	INDUCTOR CHIP 0UH			
FB316	1-414-228-11	INDUCTOR CHIP 0UH			
FB401	1-414-228-11	INDUCTOR CHIP 0UH			
FB402	1-414-228-11	INDUCTOR CHIP 0UH			
FB403	1-414-228-11	INDUCTOR CHIP 0UH			
		< FILTER >			
FL301	1-233-512-21	FILTER, EMI			
FL302	1-233-512-21	FILTER, EMI			
		< IC >			
IC301	8-759-075-66	IC TA75S01F			
IC302	8-759-058-62	IC TC7S08FU (TE85R)			
IC303	8-759-058-60	IC TC7SU04FU (TE85R)			
IC304	8-752-384-70	IC CXD2486R			
IC305	8-759-462-43	IC AD9800JCSTRL			
IC306	8-759-426-25	IC MB88346LPFV-G-BND-E			
IC307	8-752-386-03	IC CXD2175BR			
IC309	8-759-058-58	IC TC7S04FU (TE85R)			
IC310	8-759-447-77	IC TC7WH74FU (TE12R)			
IC311	8-759-447-77	IC TC7WH74FU (TE12R)			
IC312	8-759-447-77	IC TC7WH74FU (TE12R)			
IC313	8-759-058-54	IC TC7S00FU (TE85R)			
IC401	8-759-380-80	IC LA7473V-TLM			
IC501	8-759-445-93	IC AK6440AM-E2			

Ref. No.	Part No.	Description			Remark
IC502	8-759-496-78	IC S579173PZ-TEB			
		< JACK >			
J401	1-691-737-11	JACK (SMALL TYPE) (MIC(PLUG IN POWER))			
		< COIL >			
L301	1-414-398-11	INDUCTOR 10uH			
L302	1-414-754-11	INDUCTOR 10uH			
L303	1-414-754-11	INDUCTOR 10uH			
L401	1-414-754-11	INDUCTOR 10uH			
L501	1-414-754-11	INDUCTOR 10uH			
		< TRANSISTOR >			
Q301	8-729-117-73	TRANSISTOR 2SC4178-F13F14-T1			
Q302	8-729-030-54	TRANSISTOR MSB1218A-RT1			
Q303	8-729-030-54	TRANSISTOR MSB1218A-RT1			
Q501	8-729-026-30	TRANSISTOR 2SJ346-TE85L			
Q502	8-729-028-26	TRANSISTOR 2SK1829 (TE85L)			
Q503	8-729-402-42	TRANSISTOR UN5213			
		< RESISTOR >			
R302	1-216-821-11	METAL CHIP	1K	5%	1/16W
R303	1-216-821-11	METAL CHIP	1K	5%	1/16W
R304	1-216-809-11	METAL CHIP	100	5%	1/16W
R305	1-216-809-11	METAL CHIP	100	5%	1/16W
R306	1-216-821-11	METAL CHIP	1K	5%	1/16W
R307	1-216-801-11	METAL CHIP	22	5%	1/16W
R308	1-216-807-11	METAL CHIP	68	5%	1/16W
R310	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R312	1-216-857-11	METAL CHIP	1M	5%	1/16W
R313	1-216-813-11	METAL CHIP	220	5%	1/16W
R314	1-216-809-11	METAL CHIP	100	5%	1/16W
R316	1-216-841-11	METAL CHIP	47K	5%	1/16W
R317	1-216-845-11	METAL CHIP	100K	5%	1/16W
R319	1-218-876-11	RES,CHIP	16K	0.50%	1/16W
R321	1-218-847-11	RES,CHIP	1K	0.50%	1/16W
R324	1-216-864-11	METAL CHIP	0	5%	1/16W (CVX-V3)
R325	1-216-857-11	METAL CHIP	1M	5%	1/16W (CVX-V3P)
R326	1-216-864-11	METAL CHIP	0	5%	1/16W (CVX-V3P)
R327	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R328	1-216-845-11	METAL CHIP	100K	5%	1/16W (CVX-V3P)
R329	1-216-864-11	METAL CHIP	0	5%	1/16W (CVX-V3P)
R330	1-216-812-11	METAL CHIP	180	5%	1/16W
R331	1-216-833-11	METAL CHIP	10K	5%	1/16W (CVX-V3P)
R332	1-216-812-11	METAL CHIP	180	5%	1/16W
R334	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R335	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (CVX-V3P)
R338	1-216-821-11	METAL CHIP	1K	5%	1/16W
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R350	1-216-864-11	METAL CHIP	0	5%	1/16W (CVX-V3P)
R401	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R402	1-216-831-11	METAL CHIP	6.8K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R405	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R406	1-216-864-11	METAL CHIP	0	5%	1/16W
R407	1-216-820-11	METAL CHIP	820	5%	1/16W
R408	1-216-833-11	METAL CHIP	10K	5%	1/16W
R409	1-216-820-11	METAL CHIP	820	5%	1/16W
R410	1-216-864-11	METAL CHIP	0	5%	1/16W
R411	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R412	1-216-833-11	METAL CHIP	10K	5%	1/16W
R413	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R414	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R415	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R416	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R417	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R418	1-216-838-11	METAL CHIP	27K	5%	1/16W
R419	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R420	1-216-838-11	METAL CHIP	27K	5%	1/16W
R421	1-216-839-11	METAL CHIP	33K	5%	1/16W
R422	1-216-839-11	METAL CHIP	33K	5%	1/16W
R501	1-216-845-11	METAL CHIP	100K	5%	1/16W
R502	1-216-845-11	METAL CHIP	100K	5%	1/16W
R503	1-216-845-11	METAL CHIP	100K	5%	1/16W
R504	1-216-845-11	METAL CHIP	100K	5%	1/16W
R505	1-216-809-11	METAL CHIP	100	5%	1/16W
R506	1-216-809-11	METAL CHIP	100	5%	1/16W
R507	1-216-845-11	METAL CHIP	100K	5%	1/16W
R508	1-216-845-11	METAL CHIP	100K	5%	1/16W
R509	1-216-845-11	METAL CHIP	100K	5%	1/16W
R510	1-216-845-11	METAL CHIP	100K	5%	1/16W
R511	1-216-821-11	METAL CHIP	1K	5%	1/16W
R514	1-216-833-11	METAL CHIP	10K	5%	1/16W
R515	1-216-845-11	METAL CHIP	100K	5%	1/16W
R516	1-216-845-11	METAL CHIP	100K	5%	1/16W
R517	1-216-813-11	METAL CHIP	220	5%	1/16W
R518	1-216-845-11	METAL CHIP	100K	5%	1/16W
R519	1-216-845-11	METAL CHIP	100K	5%	1/16W
R520	1-216-845-11	METAL CHIP	100K	5%	1/16W
R521	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R522	1-219-570-11	RES,CHIP	10M	5%	1/16W
R523	1-216-853-11	METAL CHIP	470K	5%	1/16W
R524	1-216-833-11	METAL CHIP	10K	5%	1/16W
R526	1-216-845-11	METAL CHIP	100K	5%	1/16W
R527	1-216-864-11	METAL CHIP	0	5%	1/16W
R529	1-216-857-11	METAL CHIP	1M	5%	1/16W
R530	1-216-845-11	METAL CHIP	100K	5%	1/16W
		< VARISTOR >			
VDR401	1-801-862-11	VARISTOR, CHIP			
VDR402	1-801-862-11	VARISTOR, CHIP			
		< VIBRATOR >			
X301	1-760-320-11	VIBRATOR, CRYSTAL (28.636MHz) (CVX-V3)			
X301	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz) (CVX-V3P)			
X302	1-579-613-11	VIBRATOR, CRYSTAL (17.734475MHz)			(CVX-V3P)
X501	1-767-450-11	VIBRATOR, CERAMIC (20MHz)			
X502	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)			

Ref. No.	Part No.	Description			Remark
	A-7073-499-A	IF-69 BOARD, COMPLETE (CVX-V3)			
		**********			
	A-7073-691-A	IF-69 BOARD, COMPLETE (CVX-V3P)			
		**********			
					(Ref.No.:1,000 Series)
		< CONNECTOR >			
CN901	1-766-346-21	CONNECTOR, FFC/FPC 16P			
CN902	1-537-439-31	TARMINAL BOARD, CONNECTOR (CVX-V3)			
CN902	1-537-439-11	TARMINAL BOARD, CONNECTOR (CVX-V3P)			
		< FERRITE BEAD >			
FB901	1-414-385-11	INDUCTOR CHIP 0UH			
FB902	1-414-228-11	INDUCTOR CHIP 0UH			
FB903	1-414-228-11	INDUCTOR CHIP 0UH			
FB905	1-414-228-11	INDUCTOR CHIP 0UH			
FB906	1-414-385-11	INDUCTOR CHIP 0UH			
		< COIL >			
L901	1-414-396-21	INDUCTOR 4.7uH			
		< RESISTOR >			
R901	1-216-847-11	METAL CHIP	150K	5%	1/16W
		< VARISTOR >			
VDR901	1-801-923-11	VARISTOR, CHIP			
VDR902	1-801-923-11	VARISTOR, CHIP			
VDR903	1-801-862-11	VARISTOR, CHIP			
VDR904	1-801-923-11	VARISTOR, CHIP			
VDR905	1-801-862-11	VARISTOR, CHIP			
VDR906	1-801-862-11	VARISTOR, CHIP			
VDR907	1-801-862-11	VARISTOR, CHIP			
	A-7073-497-A	VA-103 BOARD, COMPLETE (CVX-V3)			
		**********			
	A-7073-689-A	VA-103 BOARD, COMPLETE (CVX-V3P)			
		**********			
					(Ref.No.:1,000 Series)
		< CAPACITOR >			
C602	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C603	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C604	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C605	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C606	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C607	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C608	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C609	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C610	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C611	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C612	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C613	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C614	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C618	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C619	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C620	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C621	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C622	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C623	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C624	1-164-506-11	CERAMIC CHIP	4.7uF		16V

Ref. No.	Part No.	Description			Remark
C625	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C626	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C627	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C628	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C629	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C701	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C702	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C703	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C704	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C705	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C706	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C707	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C708	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C709	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C710	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C711	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C712	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C713	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C714	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C715	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C716	1-113-996-11	TANTAL. CHIP	220uF	20%	4V
C717	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C718	1-113-996-11	TANTAL. CHIP	220uF	20%	4V
C719	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C720	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C721	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C724	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C725	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C729	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C730	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C733	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C734	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C735	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C736	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C737	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C738	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C739	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C801	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C802	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C803	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C805	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
		< CONNECTOR >			
CN601	1-573-768-21	PIN, CONNECTOR (1.5MM) (SMD) 5P			
CN801	1-779-339-21	CONNECTOR, FFC/FPC 30P			
CN802	1-779-332-11	CONNECTOR, FFC/FPC 16P			
CN803	1-779-331-11	CONNECTOR, FFC/FPC 14P			
CN805	1-774-711-41	CONNECTOR, BOARD TO BOARD 20P			
		< DIODE >			
D601	8-719-057-68	DIODE SBS001C-TB			
D602	8-719-057-68	DIODE SBS001C-TB			
D603	8-719-027-77	DIODE MA796			
D604	8-719-049-09	DIODE 1SS367-T3SONY			
D801	8-719-404-49	DIODE MA111			
D802	8-719-404-49	DIODE MA111			
D803	8-719-404-49	DIODE MA111			

Ref. No.	Part No.	Description	Remark
		< FUSE >	
⚠F601	1-533-709-11	FUSE (SMD) (1.25A/24V)	
		< FERRITE BEAD >	
FB701	1-414-385-11	INDUCTOR CHIP 0UH	
FB702	1-414-385-11	INDUCTOR CHIP 0UH	
FB703	1-500-284-21	INDUCTOR CHIP 0UH	
FB704	1-414-385-11	INDUCTOR CHIP 0UH	
FB705	1-414-385-11	INDUCTOR CHIP 0UH	
FB706	1-414-385-11	INDUCTOR CHIP 0UH	
FB707	1-414-385-11	INDUCTOR CHIP 0UH	
		< FILTER >	
FL701	1-239-352-11	FILTER, LOW PASS (5MHz)	
		< IC >	
IC601	8-759-350-29	IC SN104213PM-T6	
IC602	8-759-298-10	IC S-8423NFS-T2	
IC701	8-752-055-95	IC CXA1409AQ	
IC702	8-759-998-71	IC BA3308F	
IC801	8-759-536-72	IC TL1596CPWR	
IC802	8-759-058-62	IC TC7S08FU (TE85R)	
IC803	8-759-058-60	IC TC7SU04FU (TE85R)	
		< JACK >	
J701	1-537-818-11	TERMINAL BOARD (OUT PUT)	
		< COIL >	
L601	1-424-653-11	INDUCTOR 0uH	
L602	1-424-674-11	INDUCTOR 0uH	
L603	1-424-674-11	INDUCTOR 0uH	
L604	1-414-396-21	INDUCTOR 4.7uH	
L605	1-414-406-11	INDUCTOR 220uH	
L606	1-414-396-21	INDUCTOR 4.7uH	
L701	1-414-754-11	INDUCTOR 10uH	
L702	1-414-757-11	INDUCTOR 100uH	
L703	1-412-798-11	INDUCTOR 68uH (CVX-V3)	
L703	1-412-796-41	INDUCTOR 47uH (CVX-V3P)	
		< LINE FILTER >	
LF601	1-416-107-21	INDUCTOR 0uH	
		< TRANSISTOR >	
Q601	8-729-804-41	TRANSISTOR 2SB1122-S	
Q602	8-729-039-86	TRANSISTOR FMMT717TA	
Q603	8-729-039-86	TRANSISTOR FMMT717TA	
Q604	8-729-041-23	TRANSISTOR NDS356AP	
Q605	8-729-041-24	TRANSISTOR NDS355AN	
Q606	8-729-402-42	TRANSISTOR UN5213	
Q607	8-729-030-54	TRANSISTOR MSB1218A-RT1	
Q608	8-729-030-54	TRANSISTOR MSB1218A-RT1	
Q609	8-729-030-53	TRANSISTOR MSD1819A-RT1	
Q610	8-729-030-53	TRANSISTOR MSD1819A-RT1	
Q701	8-729-421-26	TRANSISTOR UN5216QRS	
Q702	8-729-421-26	TRANSISTOR UN5216QRS	
Q703	8-729-030-54	TRANSISTOR MSB1218A-RT1	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
Q704	8-729-030-54	TRANSISTOR	MSB1218A-RT1		
Q705	8-729-421-26	TRANSISTOR	UN5216QRS		
Q706	8-729-421-26	TRANSISTOR	UN5216QRS		
Q707	8-729-030-53	TRANSISTOR	MSD1819A-RT1		
Q708	8-729-030-54	TRANSISTOR	MSB1218A-RT1		
Q709	8-729-420-53	TRANSISTOR	UN5115		
Q801	8-729-030-53	TRANSISTOR	MSD1819A-RT1		
Q802	8-729-030-53	TRANSISTOR	MSD1819A-RT1		
Q803	8-729-402-42	TRANSISTOR	UN5213		
		< RESISTOR >			
R601	1-216-841-11	METAL CHIP	47K	5%	1/16W
R602	1-216-837-11	METAL CHIP	22K	5%	1/16W
R603	1-216-839-11	METAL CHIP	33K	5%	1/16W
R604	1-216-833-11	METAL CHIP	10K	5%	1/16W
R606	1-216-836-11	METAL CHIP	18K	5%	1/16W
R607	1-216-837-11	METAL CHIP	22K	5%	1/16W
R608	1-216-821-11	METAL CHIP	1K	5%	1/16W
R609	1-216-845-11	METAL CHIP	100K	5%	1/16W
R610	1-216-839-11	METAL CHIP	33K	5%	1/16W
R611	1-216-857-11	METAL CHIP	1M	5%	1/16W
R612	1-216-839-11	METAL CHIP	33K	5%	1/16W
R613	1-216-834-11	METAL CHIP	12K	5%	1/16W
R614	1-216-837-11	METAL CHIP	22K	5%	1/16W
R615	1-216-853-11	METAL CHIP	470K	5%	1/16W
R616	1-216-857-11	METAL CHIP	1M	5%	1/16W
R618	1-216-853-11	METAL CHIP	470K	5%	1/16W
R619	1-216-849-11	METAL CHIP	220K	5%	1/16W
R620	1-216-841-11	METAL CHIP	47K	5%	1/16W
R621	1-216-837-11	METAL CHIP	22K	5%	1/16W
R622	1-216-845-11	METAL CHIP	100K	5%	1/16W
R623	1-216-845-11	METAL CHIP	100K	5%	1/16W
R624	1-216-833-11	METAL CHIP	10K	5%	1/16W
R625	1-218-877-11	RES,CHIP	18K	0.50%	1/16W
R626	1-218-879-11	RES,CHIP	22K	0.50%	1/16W
R627	1-218-891-11	RES,CHIP	68K	0.50%	1/16W
R701	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R702	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R703	1-216-821-11	METAL CHIP	1K	5%	1/16W
R704	1-216-821-11	METAL CHIP	1K	5%	1/16W
R705	1-216-821-11	METAL CHIP	1K	5%	1/16W
R706	1-216-821-11	METAL CHIP	1K	5%	1/16W
R707	1-216-821-11	METAL CHIP	1K	5%	1/16W
R708	1-216-821-11	METAL CHIP	1K	5%	1/16W
R709	1-216-807-11	METAL CHIP	68	5%	1/16W
R710	1-216-836-11	METAL CHIP	18K	5%	1/16W
R711	1-216-807-11	METAL CHIP	68	5%	1/16W
R712	1-216-807-11	METAL CHIP	68	5%	1/16W
R713	1-216-857-11	METAL CHIP	1M	5%	1/16W
R715	1-216-836-11	METAL CHIP	18K	5%	1/16W
R716	1-216-804-11	METAL CHIP	39	5%	1/16W
R717	1-216-804-11	METAL CHIP	39	5%	1/16W
R718	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R719	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R720	1-216-821-11	METAL CHIP	1K	5%	1/16W
R721	1-216-821-11	METAL CHIP	1K	5%	1/16W
R722	1-218-860-11	RES,CHIP	3.6K	0.50%	1/16W
R723	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R724	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R725	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R726	1-216-821-11	METAL CHIP	1K	5%	1/16W
R727	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R728	1-216-823-11	METAL CHIP	1.5K	5%	1/16W (CVX-V3)
R728	1-216-817-11	METAL CHIP	470	5%	1/16W (CVX-V3P)
R729	1-216-821-11	METAL CHIP	1K	5%	1/16W
R730	1-216-841-11	METAL CHIP	47K	5%	1/16W
R731	1-216-841-11	METAL CHIP	47K	5%	1/16W
R732	1-216-821-11	METAL CHIP	1K	5%	1/16W
R733	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R735	1-216-833-11	METAL CHIP	10K	5%	1/16W
R736	1-216-833-11	METAL CHIP	10K	5%	1/16W
R737	1-216-815-11	METAL CHIP	330	5%	1/16W
R738	1-216-815-11	METAL CHIP	330	5%	1/16W
R739	1-216-834-11	METAL CHIP	12K	5%	1/16W
R801	1-216-853-11	METAL CHIP	470K	5%	1/16W
R802	1-216-833-11	METAL CHIP	10K	5%	1/16W
R803	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R804	1-216-817-11	METAL CHIP	470	5%	1/16W
R805	1-216-817-11	METAL CHIP	470	5%	1/16W
R806	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R807	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R809	1-216-845-11	METAL CHIP	100K	5%	1/16W
R810	1-216-845-11	METAL CHIP	100K	5%	1/16W
R811	1-216-853-11	METAL CHIP	470K	5%	1/16W
R812	1-216-841-11	METAL CHIP	47K	5%	1/16W
R813	1-216-833-11	METAL CHIP	10K	5%	1/16W
R814	1-216-821-11	METAL CHIP	1K	5%	1/16W
R815	1-216-864-11	METAL CHIP	0	5%	1/16W
		< TRANSFORMER >			
T601	1-426-938-11	TRANSFORMER, DC/DC CONVERTER			
		< VARISTOR >			
VDR601	1-801-923-11	VARISTOR, CHIP			
VDR602	1-801-862-11	VARISTOR, CHIP			
VDR701	1-801-923-11	VARISTOR, CHIP			
VDR702	1-801-923-11	VARISTOR, CHIP			
VDR703	1-801-923-11	VARISTOR, CHIP			
VDR704	1-801-862-11	VARISTOR, CHIP			
VDR705	1-801-862-11	VARISTOR, CHIP			

		MISCELLANEOUS
		**********
2	1-694-076-21	TERMINAL BOARD, BATTERY
3	1-783-522-11	CABLE, FLEXIBLE FLAT (FFC-246)
4	1-783-523-11	CABLE, FLEXIBLE FLAT (FFC-247)
17	1-475-734-11	SWITCH BLOCK, CONTROL (VC)
64	1-783-521-12	CORD, CONNECTION
MIC301	3-051-120-11	MICROPHONE ASSY

		ACCESSORIES
		**********
	1-784-838-21	ADAPTOR, CONNECTION
	3-864-961-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)
	3-864-961-21	MANUAL, INSTRUCTION (GERMAN, ITALIAN) (CVX-V3P)

9-974-108-11

Sony Corporation
Personal A&V Products Company

98H0512-1
Printed in Japan © 1998. 8
Published by Quality Engineering Dept.
(Osaki East)